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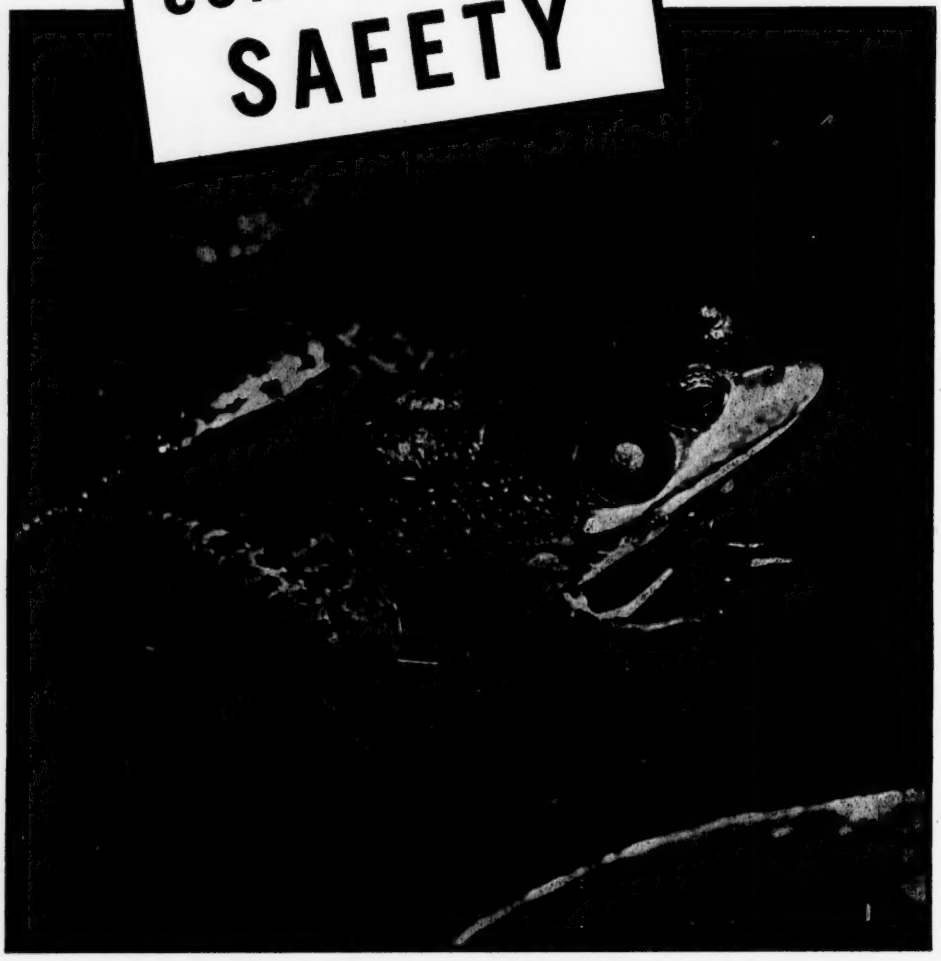

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GENERAL INFORMATION 1

EDITORIALS

The Importance of Patents and Copyrights to the Surgical Profession
Dr. W. J. Carson 3

ANNOUNCEMENTS

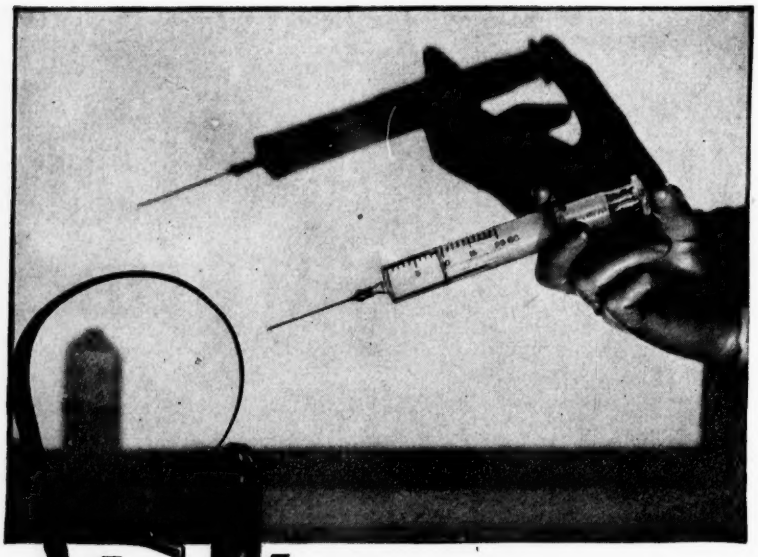
International Assembly of the International College of Surgeons 4
Awards 4
Change of Name 4
Frequency of "Journal" Augmented 4

ORIGINAL ARTICLES

Lesions of the Cranial Nerves: Diagnosis and Treatment
Dr. Walter E. Dandy 5
Subcapital Fractures of the Hip: Why Do Not These Unite as Other Fractures?
Dr. Fred H. Albee 15
Gastrectomy for Various Conditions
Dr. John F. Erdmann and Dr. Harold E. Clark 25
Cystic Hygroma
Mr. Hamilton Bailey, F.R.C.S. (Eng.) 31
Prostatic Hypertrophy: Pathologic Basis for Treatment
Dr. David M. Davis 35
Congenital Atrophy of the Ulna
Dr. Manuel A. Manzanilla 41
Pharyngeal Diverticulum: One Stage Resection
Dr. Thomas A. Shallow 48

NEW INSTRUMENTS

An Improved Gastric Clamp
Dr. Richard A. Leonardo 53



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HISTORY

Carlos Juan Finlay, Pioneer, 1833 - 1915
Dr. V. O. Cardenas 55

RADIO ADDRESSES

Present Status of the Cancer Problem
Dr. André Crotti 57

Aims and Objectives of the International College of Surgeons
Dr. Max Thorek 59

SCIENTIFIC ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS 61

MEETINGS AND CONGRESSES

Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct. 13 and 14, 1938 62

Convention of International Hospital Association and American Hospital Association, Toronto, Canada, September 1939 83

Other Meetings and Congresses 84

BOOK REVIEWS

Die angeborenen Fehlbildungen der menschlichen Hand: Erb- und Konstitutionsbiologie der Hand
Dr. Walther Müller 85

Diseases of the Ear, Nose and Throat
Dr. Francis L. Lederer 85

Die Röntgentiefentherapie
Dr. Hans Holfelder and others 86

Clinique chirurgicale des pays chauds
Dr. Botreau-Roussel 86

Surgery of the Esophagus
Dr. Raymond Grégoire 87

Die verletzte Hand: Behandlung- und Behandlungsergebnisse der Finger- und Handverletzungen
Dr. Karl Kromer 87

Modern Surgical Technique
Dr. Max Thorek 87

Lezioni di clinica medica
Dr. Cesare Frugoni 88

Operative Behandlung der Schenkelhalsbrüche und Schenkelhalspseudoarthrosen und ihre Ergebnisse
Dr. Lorenz Böhler and Dr. William Jeschke 88

Demonstrations of Physical Signs in Clinical Surgery
Mr. Hamilton Bailey, F.R.C.S. (Eng.) 89

Fractures and Dislocations for Practitioners
Dr. Edwin O. Geckeler 89

Cranio-Cerebral Injuries
Dr. Donald Munro 90

Exhibitors at the International Assembly of the International College of Surgeons 91

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GENERAL INFORMATION

THE Journal of the International College of Surgeons is published for the time being under the auspices of the United States Chapter of the International College of Surgeons, for the advancement of surgery and as a medium of publication for reports of research, clinical observations and experimental work in surgery, as well as to acquaint members of the International College of Surgeons throughout the world of its activities.

Ownership: The Journal of the International College of Surgeons is a nonprofit publication owned and published by the United States Chapter.

Material: Scientific articles and communications on matters of surgical and related interests are invited. These must be submitted to the Editorial Board, which reserves the right to reject any material deemed unsatisfactory. All manuscripts are subject to editorial modification.

Scientific Papers: The publication of scientific papers in the Journal is not limited to the Members and Fellows. Any surgeon may submit original contributions, which will be considered by the Editorial Board for acceptance. Thus, while the Journal is the official organ of the International College of Surgeons, it is also an open forum for the expression of contemporary surgical advancement, thought and research. There is no discrimination as to those who may submit original papers; it is the scientific value of the contribution that determines its acceptability for publication.

Article I, Section V, of the Constitution of the College reads:

"It is strictly non-sectarian and non-political; it is decidedly against arbitrary restriction of merit and is free from prejudices, and will recognize the SURGEON and his accomplishments, and will not be influenced by his financial, political and other irrelevant status."

Exclusive Publication: Original articles are accepted with the understanding that they are contributed only to the Journal of the International College of Surgeons.

Manuscripts: All correspondence relating to the submission, acceptance, rejection or publication of manuscripts, as well as books and monographs for review, programs and reports of proceedings of societies and general communications should be addressed to the Editorial Office, 850 West Irving Park Boulevard, Chicago, Ill., U. S. A. Except where special arrangements are made, return first-class postage must accompany manuscripts. Otherwise this office cannot be held responsible for the material sent.

All manuscripts must be typed, double-spaced, on one side of standard manuscript sheets; the left margin should be 1½ inches in width to permit proper editing. Manuscripts should bear the address of the author. No manuscript will be accepted for publication without consideration by the Editor-in-Chief and the approval of the Editorial Board.

Two carbon copies should accompany the original paper. A summary must be given at the end of the article.

Contributions in a foreign language should be sent to Prof. Rudolf Nissen, Divanyolu, 105, Ortaköy, Istanbul, Turkey.

Anonymous contributions of any and all sorts will not be published.

Illustrations: These should be numbered and the legend written on the back, with the title of the article, and the top of the picture should be indicated. Glossy paper produces the best halftones. Charts drawn for reproduction should be made in black India ink; legends should be typewritten at the end of the manuscript.

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For information about membership in the International College of Surgeons and other matters pertaining thereto, address Dr. Edward Frankel, Jr., Executive Secretary, 217 East Seventeenth St., New York City.

Membership fees and dues for the United States Chapter shall be made payable to the United States Chapter of the International College of Surgeons and sent to Dr. Benjamin I. Golden, Golden Clinic, Elkins, W. Va.

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Members, Fellows and officers of the International College of Surgeons and chapters do not pay additional subscription fees for the Journal. These are included in the annual dues.

ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS, ROOSEVELT HOTEL, NEW YORK CITY, MAY 21 TO 25

VISIT OUR EXHIBITS

Editorials

THE IMPORTANCE OF PATENTS AND COPYRIGHTS TO THE SURGICAL PROFESSION

WHEN the founders of America drafted the Constitution they realized that in order to promote the progress of science and the useful arts it would be necessary to secure for limited times to *authors* and *inventors* the exclusive right to their writings and their discoveries (Article 1, Section 8, of the Constitution of the United States of America).

Since 1934 the American Association for the Advancement of Science has been studying the effect of medical inventions being patented. A. G. Connelly, of Wilmington, Del., an expert on patent law (*Science* 86:384, 1937) is convinced that the true position in this controversy, from the standpoint of both the medical profession and the general public is *"That it is unethical not to patent medical inventions"* and shows: (*a*) Even though the inventor refrains from patenting his invention he does not necessarily prevent others from patenting it. (*b*) If a patent is obtained by others it may be developed in a manner which is detrimental to the public, and in any event such development depends upon the discretion of another. (*c*) If the invention is not patented there can be very little control over the quality of the product, and over the price at which it is offered to the public.

The House of Delegates of the American Medical Association adopted the following resolution in June 1914:

"Resolved, That the Board of Trustees of the American Medical Association shall be permitted to accept at their discretion patents for medical and surgical instruments and appliances and to keep these patents as Trustees for the benefit of the profession and the public, provided that neither the American Medical Association nor the patentee shall receive remuneration from these patents."

Dr. Morris Fishbein has suggested the development of a central organization capable of administrating medical patents for the benefit of the public. Such a central body might also set up requirements for clinical research in connection with the development of new products (*J. A. M. A.* 109:1539-1543 [Nov. 6] 1937).

The Engineers Society of Milwaukee has made a special study of the effect of McFarlane Bills H. R. 9259 and H. R. 10068, Cannery Bill H. R. 9815, O'Malley Bill H. R. 1666, and Randolph Bill H. R. 7939, which would compel a patentee to license his patent any time after three years from the date of granting—on scientific research, and they are unanimous in their opinion that any such change in the law would seriously reduce the funds allotted to research (Ball, J. D.: *Milwaukee Engineering* 18:7-8, 1938).

We in surgery, who are working daily with instruments and appliances which are patented, realize that the time and expense has been great in developing the science of surgery to its present position and are jealous of the institutions with large endowments received directly or indirectly from patent royalties which permit unlimited experimental resources.

The International College of Sur-

geons is strictly nonpolitical and can take no action in the controversy, but the Fellows as individual citizens should be and are alert to the fact that the economic and political conditions of the community determine the history of humanity.

W. J. CARSON, M.D., F.A.C.S., F.I.C.S.

ANNOUNCEMENTS

INTERNATIONAL ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS

The international assembly of the International College of Surgeons will be held in New York City, May 21 to 25, under the presidency of Dr. André Crotti and general executive chairmanship of Dr. Edward Frankel, Jr., with headquarters at the Roosevelt Hotel.

Committee on Scientific Program: Dr. Fred H. Albee, Chairman; Dr. William Seaman Bainbridge, Vice Chairman; Dr. Charles H. Arnold, Secretary; Drs. B. Brooke Bland, Walter E. Dandy and Duncan Macpherson.

There will be scientific and commercial exhibits.

For information address Dr. Edward Frankel, Jr., 217 East Seventeenth St., New York, N. Y.

AWARDS

As previously announced (*Transactions of the International College of Surgeons,* 1:104 (July) 1938), the United States Chapter of the International College of Surgeons will award prizes for the best original study in thoracic surgery, in neurosurgery, and in otolaryngologic surgery. The prize for thoracic surgery will be $500; the prizes for neurosurgery and for otolaryngologic surgery will be each a diploma of merit.

CHANGE OF NAME

The TRANSACTIONS OF THE INTERNATIONAL COLLEGE OF SURGEONS will hereafter be known as the JOURNAL OF THE INTERNATIONAL COLLEGE OF SURGEONS. It is felt that the latter title is more significant of the true character of the publication, which does not confine itself to reporting activities of the College but is concerned with the field of surgery in its widest sense.

FREQUENCY OF "JOURNAL" AUGMENTED

The editors and executive council are pleased to announce that beginning with this issue the JOURNAL will appear every two months instead of quarterly. This is the result of the warm reception the JOURNAL has received. It is hoped that eventually it will become a monthly publication.

FOR INFORMATION ABOUT ASSOCIATE MEMBERSHIP, MEMBERSHIP AND FELLOWSHIP ADDRESS DR. EDWARD FRANKEL, JR., EXECUTIVE SECRETARY OF THE UNITED STATES CHAPTER OF THE INTERNATIONAL COLLEGE OF SURGEONS, 217 EAST SEVENTEENTH ST., NEW YORK CITY

LESIONS OF THE CRANIAL NERVES

DIAGNOSIS AND TREATMENT*

WALTER E. DANDY, M.D., F.A.C.S.
BALTIMORE

THERE are several pains which may, but should not, be confused with trigeminal neuralgia, and it is of the utmost importance that no mistake be made in the differential diagnosis. There is a pain which occurs in one tiny spot at some point in the face and is there at all times—twenty-four hours of the day. It never radiates and never spreads. That pain, because it is in one spot, is called topalgia. This is, as one should readily realize, a functional or psychogenic pain, because there is no organic pain referable to a nerve that can be confined to one spot all the time.

This pain is particularly distressing because it is constant and there is no possible surgical relief. The great mistake is to assume that because the cause of the pain is not known various attempts may be justified to cure it by pulling teeth, injecting nerves and operating on sinuses. And as is true with all psychogenic individuals, everything that is done to the patient makes him worse.

A second type of pain is also functional but is more difficult to diagnose because it is not so localized. This pain radiates beyond the domain of the fifth nerve. From an anatomic point of view it is obvious that it cannot be an organic pain. The pain radiates over one side of the face, spreads frequently to the other side of the face, and radiates down the neck, the shoulder and the back of the head. When a pain becomes diffuse and is not confined to an area of distribution of a nerve or of its neighboring branches through which it may communicate, that pain can be only functional. Again, the great mistake of assuming that the pain must be organic and of operating on these patients must be emphasized.

Both these patients and those with the topalgic pain, usually show the stigmas of a psychogenic individual They sleep poorly, have nightmares, and do not wish to associate with people, prefering to remain alone. They covet sympathy. They have weeping spells and not infrequently give a history of repeated nervous breakdowns. The pain must be judged on an anatomic basis, and on that basis one will not make the mistake of operating on these patients.

On the other hand, it is always a mistake to assume that a pain is functional until one is very certain that it cannot be organic. Organic pain should be the last and not the first diagnosis. At least no harm is done by assuming that the pain is functional. However, if the physician assumes that a functional pain is organic, allied perhaps to trigeminal neuralgia, and then cuts the fifth nerve and permanently paralyzes the sensory functions of the face, the patient in addition has the numbness for which he will not forgive the physician. It is bad to err on either side, but at least one should not err on the side of operating and leaving the patient with permanent sequelae.

SYMPATHETIC NEURALGIA

There is another common pain in the face, i. e., sympathetic neuralgia, so called because it has the stigmas referable to the sympathetic nervous system.

*Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Oct. 13, 1938.

This pain comes in paroxysms and is not steady, constant and relentless. It is restricted to one side of the face, so that it resembles and is closely allied to migraine, but in addition there are disturbed functions of the sympathetic system, namely, drooping of the eye, reddening of the eye, tears in one eye, and blanching or increased reddening of the face. This pain is cured by removing the stellate ganglion in the neck.

TRIGEMINAL NEURALGIA

The most important pain, from the standpoint of surgical treatment, is trigeminal neuralgia or tic douloureux. There are two types of this, the one very common, the other less so. The latter is the so-called neuralgia, in contradistinction to the tic or paroxysmal pain. The neuralgic pain is usually referred to only one branch of the nerve (possibly more, depending on the site of the lesion); it is present much of the time and increases and decreases in intensity but is not paroxysmal. Paroxysmal pain is usually due to some lesion along the course of the peripheral branch of the fifth nerve—frequently carcinomas around the mouth, or tumors along the gasserian ganglion. The most common pain in the face is tic douloureux, usually so characteristic that it cannot be mistaken for any other type of pain. It is referable to one, two or, at times all three, divisions of the fifth nerve—to the lower lip, the lower jaw, one side of the tongue, the upper lip, the region of the eye, and the forehead. The pain comes on suddenly, lasts for a few moments and leaves as suddenly as it came, although it may taper on either end. That pain is also brought on by sensory stimuli to the face—a slight blast of air, brushing the teeth, eating, or drinking, or rubbing the face. These sensory precipitants are not factors in any other type of pain.

Between attacks the patient is perfectly free from all pain; then suddenly, without warning, the pain comes on anew. It has for many years been regarded as idiopathic, but there is a definite underlying gross cause for it. I should like to emphasize a few points concerning this pain, because it has a direct bearing on treatment. It is a pain that nearly always comes after the age of 25 and usually after the age of 30, but it may occur earlier (I have seen instances in patients as young as 15 years). It is, therefore, a disease of later life. It never is cured spontaneously; that is understandable because of the underlying causes. The pain will be there to the end of one's life. There may be remissions for months or even for a year or more, but there will be recurrences; this fact dictates the form of treatment that should be utilized.

This pain is never due to an infected tooth, infected nasal sinuses or a focal infection elsewhere in the system. These facts have an important bearing, too, on the treatment, because so many patients with this terrific pain (and it is one of the worst of all pains) are treated by removal of teeth, and many have lost all their teeth in a futile effort to find a cure. Again and again they are operated on for presumed sinus infections, perhaps in the hope that a focus of infection will be uncovered; but such treatment can accomplish nothing, because the underlying cause is never peripheral. A peripheral lesion along the sensory branch of the nerve can never produce a paroxysmal pain. A paroxysmal pain always means that the upper neuron that is between the ganglion of the nerve and the brain stem is affected, and only a lesion there can cause such pain. This is known by analyzing brain tumors. If one considers the tumors occurring along the course of the fifth nerve, there being many of them, one will find that there is never one with a lesion on the peripheral branch of the nerve; there is never one at the gasserian ganglion.

Always the tumor is on the sensory root of the fifth nerve!

If this fact is appreciated, unnecessary peripheral treatments are avoided. And if one realizes that the pain is never cured spontaneously, one concludes that the only sensible form of treatment is one that will produce a permanent cure and not one that will give only a transient period of relief.

There are, as is known, two forms of treatment for this pain: (1) injection or section of the nerve peripherally and (2) operation at the sensory root or gasserian ganglion. If the nerve is injected peripherally, relief is obtained for a year or eighteen months (if the injection is a good one). This procedure, therefore, must be repeated on each return of pain throughout the patient's life. By section of the sensory root of the fifth nerve a permanent cure is produced.

The treatment of trigeminal neuralgia was first introduced by Krause, of Berlin, in 1893, at which time the gasserian ganglion was removed. The results of that treatment have been improved on from year to year until it has become a safe and effective procedure. The mortality is now about 0.5 per cent.

But there are still many liabilities in the wake of this operative procedure as performed by modifications of Krause's temporal route. First, there is the so-called keratitis, which occurs in a high percentage of cases. Within twenty-four or forty-eight hours after the operation the eye becomes red, lusterless and dry. When this occurs it means that keratitis is developing. Once keratitis develops the patient from that time on throughout his life is subject to repeated attacks of similar character, and each attack keeps him an invalid for several days, or even weeks. Frequently the keratitis progresses, and if not properly treated produces perforation and loss of the eyeball. Many eyes have been lost in this way. The percentage is less with the best of surgical skill, but this condition is always a very serious liability. Nevertheless, it is a price the patient is willing to pay in order to be liberated from such a terrible pain. The next liability is loss of the motor division of the nerve in a high percentage of cases. From this loss the jaw deviates to one side and the teeth do not approximate on mastication. If the patient subsequently develops bilateral trigeminal neuralgia, which occurs in about 2 to 5 per cent of the cases, the second side cannot be operated on, because if both motor branches were lost swallowing would not be possible. A third liability of this operation is facial paralysis, which occurs in perhaps 10 per cent of the cases. In most instances there is partial recovery of function, but in some there is none. The paralysis is due to injury of the geniculate ganglion either directly or through tearing the superficial petrosal nerves out of the ganglion as the dura is stripped from the petrous temporal bone. And a fourth liability is that every now and then, from an extradural hemorrhage, epilepsy follows in the wake, and once epilepsy begins it is uncurable.

A few years ago, in developing an operation for the removal of acoustic tumors (cerebellar exposure) the sensory root of the fifth nerve was seen to be fully exposed. Why could not the nerve be divided at that point in patients with tic douloureux? It was tried and found much easier technically. After the cerebellum was elevated, the nerve was at once exposed without any intermediate bleeding. At first there appeared to be no reason to believe that division of the nerve at that point would have any advantage other than simplicity of performance over the division of the nerve by the temporal route. But as time went on and cases multiplied, it was found that all the liabilities that occurred with division by the temporal route were avoided.

One never saw keratitis following such division of the nerve. This sequela was not due to loss of sensation, as has been supposed It had resulted from and have no fear of injuring the functions of mastication. Moreover, one never injured the seventh nerve, because it was a safe distance from the fifth

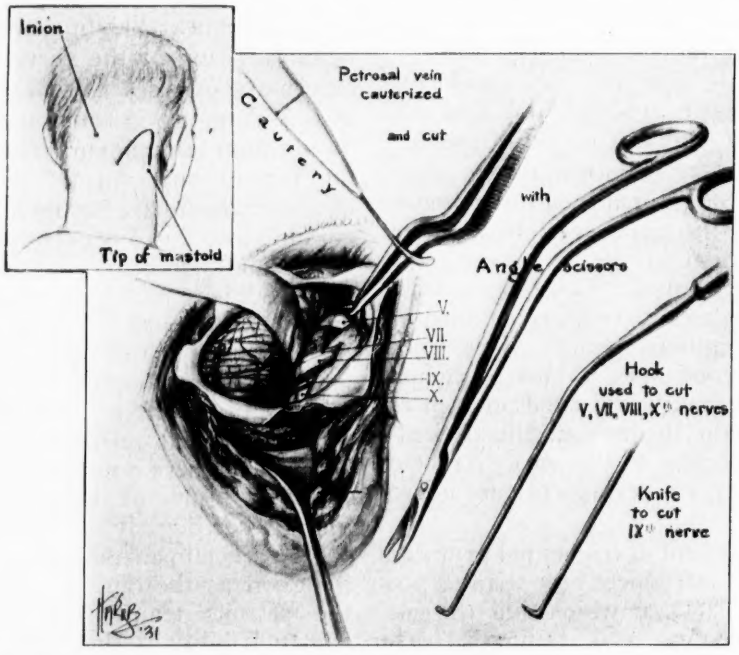

FIG. 1. Drawing showing the fifth, eighth and ninth nerves exposed intracranially by the same operative approach after elevating the cerebellum. Most of the nerves are now divided with the cautery; the fifth nerve is picked up with the forceps and the desired amount divided; the eighth nerve is picked up with the hook and the desired amount divided; the ninth nerve can be divided with the cautery or with an angle knife.

operative trauma to the gasserian ganglion; i. e., it was a trophic keratitis. It required only an instant to divide the nerve as exposed under the cerebellum, whereas by the temporal route one was constantly and over a long period packing bleeding vessels and thus traumatizing the gasserian ganglion and the sensory root. This trauma produced the keratitis. The avoidance of keratitis is alone a great advantage.

Then, too, the motor root of the nerve was never injured by such division, because it is quite a distance from the sensory root in the posterior cranial fossa. Therefore, in cases of bilateral tic douloureux one could divide both fifth nerves (and at a single operation) nerve. And one never caused epilepsy, because epilepsy is always due to a lesion in the cerebral hemisphere (never the cerebellum), and therefore only trauma to the cerebral hemisphere can produce it. As time went on I found that all the liabilities of the old operative procedure were avoided and at no additional risk (fig. 1).

Many years ago, at the suggestion of Spiller, of Philadelphia, fractional division of the nerve was introduced and appeared to be a distinct advance. One could often divide only part of the sensory root and still cure the pain. It was just as easy to divide the root partially in the posterior approach under the cerebellum. But there is al-

ways one deterrent to partial section of the nerve, namely, the danger of recurrence (about 10 per cent). I still prefer to do a partial section on younger patients, because it means a great deal to preserve the sensation to the face. However, in older persons I prefer to divide the nerve completely If recurrence should develop, it is easy to reopen the wound and complete the division of the nerve.

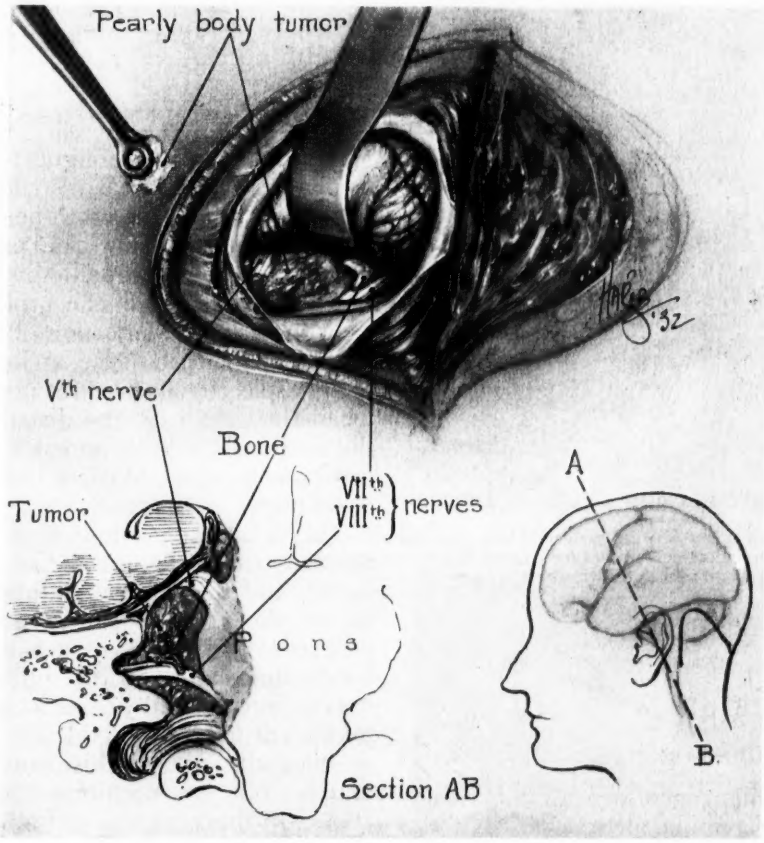

FIG. 2. Pearly body tumor in the cerebellopontine angle causing tic douloureux.

Here is an interesting point in physiology: If one divides the posterior half or even three fourths of the sensory root of the nerve, it is possible to preserve practically the entire sensation to the face and at the same time cure the pain, regardless of the branch or branches involved. It was formerly believed that each third of the sensory root carried the fibers and functions of one of the peripheral branches of the nerve, i. e., that the lower third of the sensory root functioned for the lower peripheral division of the nerve, the middle third for the middle branch, and the upper third for the upper branch. But that is not so. After leaving the gasserian ganglion, the central fibers distribute themselves according to functions and not according to the peripheral divisions of the nerve.

One of the important advantages of the cerebellar operative attack is that in one out of every twenty cases (5 per cent) a tumor will be found in the cerebellopontine angle (fig. 2), pressing on the fifth nerve and causing this pain. In

another 5 per cent of the cases an aneurysm of the basilar artery will be disclosed, and in nearly all the remaining cases an artery will be found on either the under or the outer surface of the sensory root. It is the pressure of this artery on the bare sensory root that causes the tic pain. This explains why

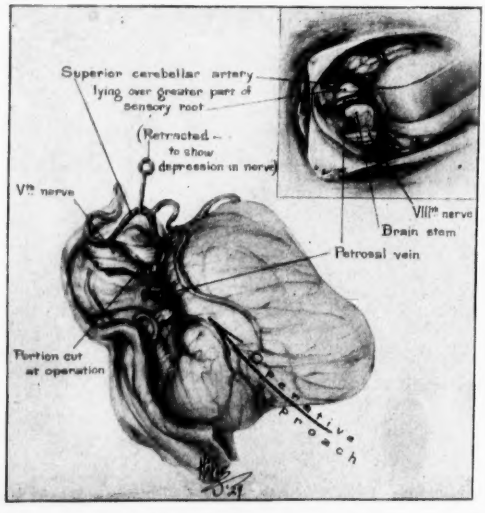

FIG. 3. Drawing showing arterial loop in the lateral cistern, indenting the sensory root of the fifth nerve and causing trigeminal neuralgia.

the pain appears in the later part of life, when the artery hardens from sclerosis (fig. 3).

GLOSSOPHARYNGEAL NEURALGIA

Glossopharyngeal neuralgia is closely akin to trigeminal neuralgia. It is, of course, referable to the ninth nerve. The pain is similar to trigeminal neuralgia in that it is paroxysmal. Since it is paroxysmal, the cause is referred to the sensory root of the nerve, not to its peripheral branch The pain is located in the back of the throat, in the region of the tonsil and the back of the tongue. It is a particularly devastating pain, because the patient cannot swallow without inducing it. Patients with this pain are apt to assume a characteristic posture, in which the head is bent forward and downward away from the side of the pain. They are trying to get the head in such a position that the saliva will drool out and away from the trigger zone. This dreadful pain is much less frequent than trigeminal neuralgia, but is common enough. And it, too, is simply cured by cutting the ninth nerve intracranially, the same operative approach being used as for the attack on the fifth nerve.

CARCINOMA OF THE MOUTH AND TONGUE

Carcinoma of the tongue frequently involves the peripheral distributions of both the fifth and the ninth nerve. It is usually a very painful lesion, preventing eating and causing rapid loss of weight. Since it is incurable, the procedure of choice is alcoholic injection of the third branch of the fifth nerve, as long as the pain is solely from the fifth nerve. But when the pain is in the distribution of the ninth nerve, injection will be of no avail, as it is not possible to inject the ninth nerve peripherally.

The patient, of course, is in constant torture with the ulceration in the mouth and the sensory endings painful at all times. One can stop the pain permanently, as long as it is one-sided, by dividing both the fifth and the ninth nerves intracranially, and it only takes an instant longer to divide the two than it does the one. This can be done simply; one can cocainize the sensory roots of these nerves before dividing them, thus rendering them painless.

There are not many procedures that offer greater relief of pain for patients with carcinoma of the mouth or tongue.

MÉNIÈRE'S DISEASE

I have heard it said, "I do not think there is such a disease as Ménière's disease." On the contrary, it is one of the most common diseases, as common as trigeminal neuralgia. As so often happens when one does not understand a syndrome, one does not see it. But

if one cultivates that field intensively, cases begin to accumulate; instead of being a rare lesion, Ménière's disease is found to occur with great frequency.

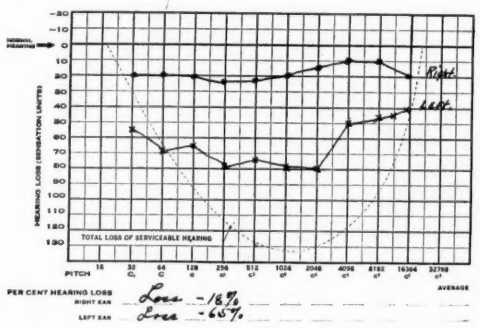

FIG. 4. Typical audiogram of a patient with unilateral Ménière's disease, showing normal hearing in one ear and reduced hearing in the other.

It is, too, one of the simplest diseases to cure and to cure with no residual effects. It is one of the easiest syndromes to recognize. There occur sudden attacks of terrific dizziness in which objects appear to whirl or move. It is a paroxysmal disturbance like trigeminal neuralgia, but it is a disturbance of the function of the eighth nerve and is, therefore, concerned with equilibrium or its human counterpart, the visual disturbance of moving objects. A patient, perfectly normal in every other way, suddenly has an attack of terrific dizziness. This lasts for a few minutes, more frequently a few hours, sometimes days, and then passes off. The patient is well again until the next attack. Like tic douloureux, these attacks never stop spontaneously. Nor are these attacks ever due to a middle ear infection, just as trigeminal neuralgia is never due to an infection of the paranasal sinuses or teeth.

Ménière's disease is a series of these recurring attacks of dizziness, but that dizziness has one characteristic which is absolute—objects appear to rotate or move. It is entirely unlike swoony dizziness, because it is referable to the eighth nerve, which is in conjunction with the semicircular canals. In addition to these recurring attacks of dizziness, there are usually nausea and

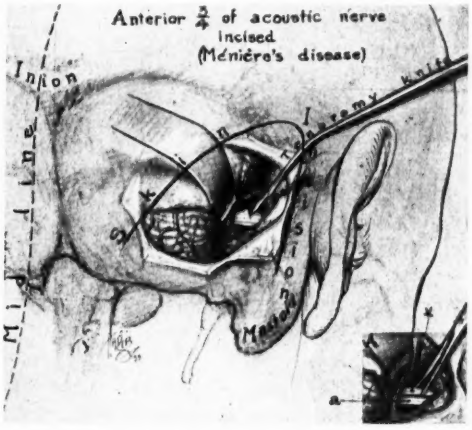

FIG. 5. Sketch showing partial division of the auditory nerve, i. e., division of the vestibular branch, which comprises the anterior half of the nerve. This leaves the auditory branch intact or practically so.

vomiting, and nearly always tinnitus in one ear, and that ear is subtotally deaf (fig. 4). The syndrome, therefore, is dizzy attacks grafted on a subtotally

FIG. 6. Photograph showing scar resulting from operation for trigeminal neuralgia, glossopharyngeal neuralgia, carcinoma of the tongue or Ménière's disease.

deaf ear, with tinnitus in that ear and usually nausea and vomiting.

There is only one other condition that can give this picture; that is pseudo-Ménière's disease, which is exactly like

Ménière's disease except that there is no disturbance of hearing on either side. It is then not possible to tell to which ear the attacks are referred. There are nausea and vomiting, but no tinnitus. Ménière's disease is usually unilateral, but sooner or later in 10 per cent of the cases it may become bilateral.

The treatment for Ménière's disease is division of the eighth nerve, either partial or total. If the eighth nerve is totally divided, complete deafness will result on the side of division, but the hearing is usually of little practical value. In recent years I have in many cases been dividing only the

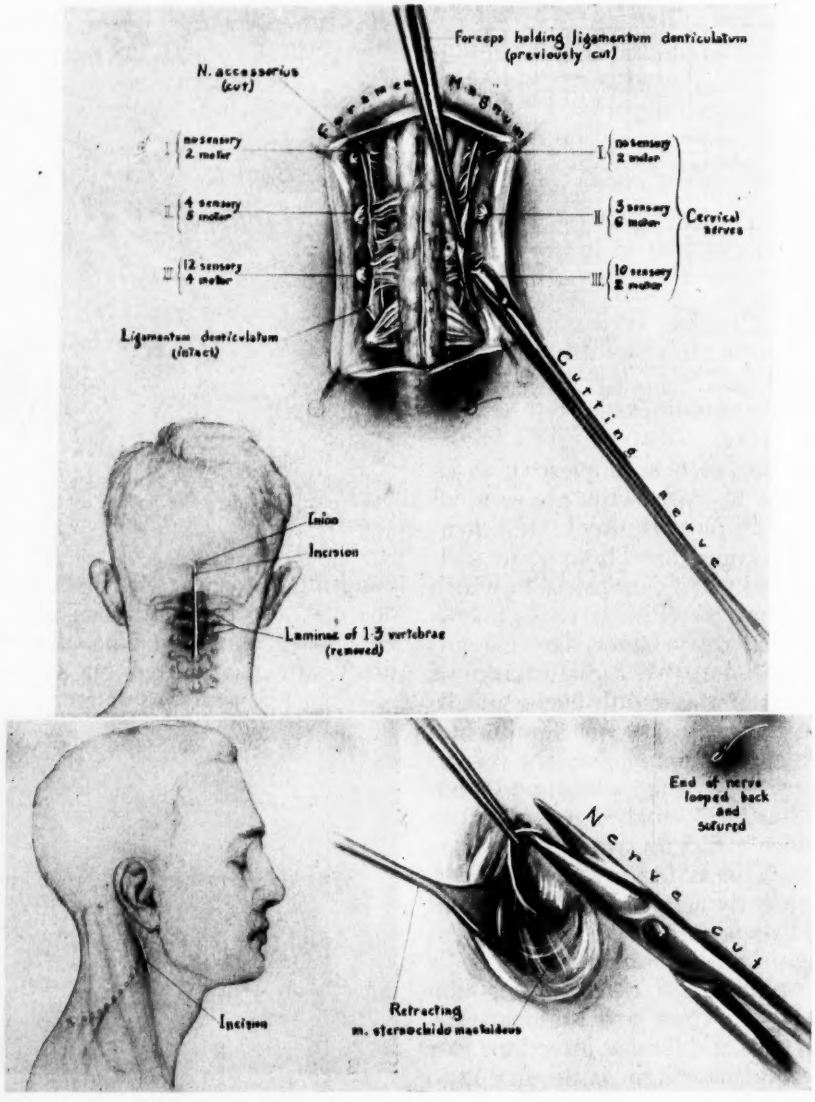

FIG. 7. Drawings illustrating the operation for torticollis. The first, the second, the third and sometimes the fourth motor branches are divided intraspinally, and immediately following this the spinal accessory nerves are divided in the neck.

vestibular branch of the nerve, leaving the cochlear branch intact so that no hearing is lost (fig. 5). I have found that over half of the cochlear branch of the nerve can be divided without any loss of hearing. If the patient has bilateral Ménière's disease or pseudo-Ménière's disease, all hearing should be preserved. Bilateral partial section of the nerve will then effect a cure. This can be done at a single operation. If there is any doubt as to whether the condition is unilateral or bilateral, it should always be assumed that it is unilateral, and the vestibular branch on one side only should be sectioned. The vestibular branch on the other side can be divided later if the dizzy attacks continue. But with both vestibular branches divided there is never dizziness again.

It is interesting that patients without the vestibular nerves cannot become seasick. Of course, bilateral division is reserved only for those in whom the attacks are severe enough to demand surgical treatment. Given a strictly unilateral form, the patient can be assured that there will be no more attacks of dizziness unless the nerve on the other side subsequently becomes involved.

COMMENT

All the cranial nerves concerned with the aforementioned disturbances are in the posterior cranial fossa and are reached by the same operative procedure. All of these procedures are the outgrowth of operative attack on acoustic tumors which for so many years were incurable, but now are removable with little risk (fig. 6).

SPASTIC TORTICOLLIS

All physicians have seen patients with spastic torticollis, in whom the neck is rigid, twisted, and pulled far over to one side. The cause is entirely unknown. The cure is produced by dividing both spinal accessory nerves plus the first, second, third and sometimes the fourth cervical motor roots intraspinally (fig. 7). The cervical motor nerves are sectioned through a high cervical laminectomy incision. The spinal accessory nerves are divided peripherally in the neck.

The first cure of this baffling condition was introduced by Dr. Finney, of Baltimore, who divided all the nerves peripherally in the neck. He stripped all the muscles and the nerves from the cervical spine. Other attempts before that had been unilateral procedures of various types, all of which were useless. Dr. Finney's end-results are now accomplished much more simply and easily by dividing these nerves intraspinally.

SUMMARY

A remarkable group of lesions are described, all curable with almost no mortality and with few and no serious residual effects.

Sympathetic neuralgia is cured by removing the stellate ganglion in the neck. Trigeminal neuralgia is relieved by dividing the sensory root of the fifth nerve through a posterior intracranial incision, thus avoiding the liabilities accompanying removal of the gasserian ganglion. Glossopharyngeal neuralgia is cured by cutting the ninth nerve. The pain due to carcinoma of the mouth or tongue is aided by division of both the fifth and the ninth nerves; this must be unilateral. The treatment of Ménière's disease is partial or total division of the eighth nerve, also through the posterior intracranial approach.

RÉSUMÉ

Lésions des nerfs crâniens

Un groupe remarquable de lésions est décrit, toutes curables, avec une faible mortalité et avec peu de séquelles graves. La névralgie sympathétique est guérie par l'ablation du ganglion stellaire du cou. La névralgie du tri-

jumeau est soulagée par la division de la racine sensitive du cinquième nerf, effectuée par une incision postérieure intra-crânienne; ainsi on évite l'enlèvement du ganglion de Gasser. On peut guérir la névralgie du nerf glosso-pharyngien par la section de ce nerf. La douleur due à un carcinome de la bouche ou de la langue est soulagée par la division du cinquième et du neuvième nerf; cette division doit être unilatérale. Le traitement de la maladie de Ménière demande la division partielle ou totale du huitième nerf. Cette division sera aussi effectuée par la voie postérieure intra-crânienne.

ZUSAMMENFASSUNG

Erkrankungen der Hirnnerven

Der Autor beschreibt eine beachtliche Anzahl von Hirnnervenerkrankungen, die fast ohne Todesfälle geheilt wurden und nur geringe und leichte Spuren hinterliessen. Sympathischen Neuralgie wird geheilt durch Exstirpation des Ganglion stellatum am Hals. Besserung der Trigeminusneuralgie wird erzielt durch Durchtrennung der sensiblen Wurzel des V. Nerven mittels eines hinteren intracraniellen Schnittes, ein Verfahren, vermittels dessen man die Schwierigkeiten, die an eine Entfernung des Ganglion Gasseri gebunden sind, vermeiden kann. Glossopharyngeusneuralgie wird behandelt durch Durchtrennung des IX. Nerven. Schmerzen verursacht durch Karzinom der Zunge oder der Mundhöhle werden erleichtert durch einseitige Durchtrennung der Nerven V und IX. Behandlung der Ménièreschen Erkrankung besteht in einer teilweisen oder totalen Durchtrennung des VIII. Nerven, ebenfalls mittels des hinteren intrakraniellen Verfahrens.

SUMARIO

Lesión de los nervios craniales

Un grupo considerable de lesiones, todas curables casi sin mortalidad y con pocos y no serios efectos residuales es descrito.

La neuralgia simpática se cura con la extirpación del ganglio estrellado (ganglio inferior del cuello). La neuralgia trigeminal se alivia con la sección de la raíz sensitiva del quinto nervio á travez de una incisión intracraneal posterior, y de esta manera se evitan las dificultades que acompañan le extirpación del ganglio de Gasser. La neuralgia glosofaringeal se cura por la sección del nervio noveno. El dolor debido al carcinoma de la boca o de la lengua es ayudado por la sección de los nervios quinto y noveno; esta debe ser unilateral. El tratamiento de la enfermedad de Ménière es la división total o parcial del octavo nervio, también á travez de la via intracraneal posterior.

RIASSUNTO

Lesioni dei nervi cranici

Un gruppo importante di lesioni di nervi cranici viene riportato; lesioni tutte guaribili senza quasi mortalità e con pochi e leggeri effetti residuali.

La nevralgia del simpatico viene guarita con la remozione del ganglio stellato nel collo. La nevralgia del trigemino è alleviata con la recisione del ramo sensorio del V, attaverso una incisione intracraniale posteriore, evitando cosi i pericoli che accompagnano la remozione del ganglio di Gasser. La nevralgia del n. glossofaringeo è curata con la recisione del IX. Il dolore dovuto a carcinoma della bocca o della lingua è alleviato dalla recisione de V e del IX (deve perô essere unilaterale). Il trattamento della Malatta di Ménière consiste nella divisione parziale o totale dell' VIII, per via intracranica posteriore.

SUBCAPITAL FRACTURES OF THE HIP

WHY DO NOT THESE UNITE AS OTHER FRACTURES?*

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IT is my belief that because of inadequate blood supply the treatment of subcapital fracture of the neck of the femur is a special problem differing from that of all other fractures. The prognosis as to union is the most unfavorable of that for all fractures — so unfavorable that Dr. Kellogg Speed in his oration on fractures before the Boston (1934) congress of the American College of Surgeons designated this fracture as unsolved. Dr. Speed's pessimistic attitude is amply borne out by a study of available statistics, some of which are as follows:

The British Commission on Fractures reported 22 per cent cases of union in all types of treatment of fractures of the central portion of the neck of the femur. In 1929 and 1930 a committee of the American Orthopedic Association studied this problem, making a survey of certain clinics in which as low a figure as 30 per cent cases of union was claimed. Within a year two hospitals in New York announced statistics showing 38 per cent cases of union, while a third hospital reported 46 per cent cases. All three hospitals reported 20 per cent cases of aseptic necrosis of the head of the femur in those cases in which union occurred, which was so marked that the condition simulated osteo-arthritis with flattening and mushrooming, and with symptoms so acute that in most cases arthrodesis of the joint was necessitated.

The cause of this unfortunate condition is undoubtedly inadequate blood supply to the femoral head. The crux of the situation is that many surgeons have failed to recognize the fact that a subcapital fracture of the hip is a different problem from that of other fractures, and have assumed that mere reduction and mechanical maintenance of the fragments in position were all that was required. For nearly twenty years, I[1] have contended that there were other factors entering into this particular fracture problem. A survey reveals an unusual situation, the importance of which, strange to say, has never been appreciated, especially when it is considered that success or failure of treatment depends on the recognition and overcoming of the difficulties disclosed. The capsule of the hip joint is attached to the neck of the femur obliquely and close to the base of the neck, and therefore a subcapital or central fracture of the neck of the femur is completely intra-articular (fig. 1). If it is completely intra-articular, with the resultant rupture of the retinacula all possible sources of blood supply to the head fragment from the trochanter region of the femur or its immediate neighborhood are cut off. This being so, the ligamentum teres can be the only remaining source of blood supply. The question then arises whether the ligamentum teres survives or is destroyed by fragment displacement at the time of the primary fracture, and, if not torn, whether it provides an adequate source of blood supply to the capital fragment. Wolcott and others have attempted to evaluate this by injecting the blood vessels of the ligamentum teres with mercury in cadaver specimens. In 15 per cent of cases Wolcott

*Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct. 14, 1938.

could not find blood vessels in the ligamentum teres of sufficient size to allow mercury to flow through them into the head or neck of the femur, and Henderson, Chandler and others have claimed as high a percentage of cases as 20 to 25. If the continuity of the ligament remains, blood vessels therein contained are sure to enlarge with the demand of blood to the capital fragment. Chandler and Kreuscher[2] in studies of 114 round ligaments from cadavers of persons aged 25 to 75 years found arteries in all.

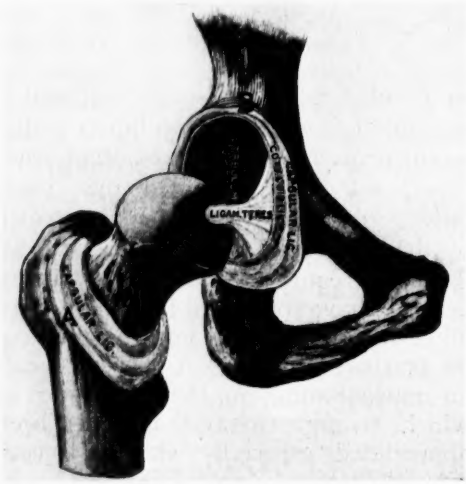

FIG. 1. The capsule of the hip joint has been removed from its insertion about the rim of the acetabulum to its insertion on the base of the neck of the femur. Between *A* and *B* the capsule is not adherent to the femoral neck at any point. Therefore a fracture of this portion of the neck is completely intra-articular, and the sole source of blood supply to the capital fragment must be via the ligamentum teres (after Testut: Traité d'anatomie humaine, Paris, O. Doin, 1899-1892).

The next question to be considered is the frequency with which the ligamentum teres or its blood vessels have been destroyed by the trauma producing the primary fracture, and in this regard there are some important observations not to be overlooked.

During the past twenty-five years I have performed 419 reconstruction operations for nonunion with marked absorption of the femoral neck, and have in each case removed the head of the femur. Some of these operations were done during the period of my service in the World War. In no instance was there a fibrous union, and in every case the synovial fluid extended from the joint through and between the fracture fragments. A careful check was always made by myself and my associates of the condition of the ligamentum teres at the time of the operation, and it may seem surprising that in 417 of these cases we found not the slightest evidence of bleeding at the cotyloid notch where the ligamentum teres is inserted into the acetabulum, which would have occurred if a vascular ligament had been evulsed or torn at operation. In a large majority of cases, all ligamentous tissue appeared to have been evulsed from the cotyloid notch; in the remaining cases tabs of ligamentous tissue were found attached to the cotyloid notch of the acetabulum and fovea of the head of the femur, or both. In two cases the ligamentum teres was found intact. In one of these the fracture was found to be at the center of the neck and due to a rifle bullet which was discovered at operation and removed from between the ununited fragments. The thought would occur to one that, since the neck of the femur was severed by a bullet, it might at the time have produced shock with its resultant muscle flaccidity. Therefore, the muscle spasm incident to the usual fracture did not occur and force the distal fragment of the femur upward, thus rotating the head in the acetabulum upward on the outside and the fovea of the head downward on the inside, to such a degree as to tear or evulse the ligamentum teres. This assumption is strengthened by the fact that the capsule is loose and alone determines the extremes of motion of the joint solely when the bony framework of the joint is intact, but has no influ-

ence in curbing rotation of the head in the event of fracture.

It is believed that the rotation of the head which tears the ligamentum teres is brought about by the concerted spasmodic contraction of two powerful groups of muscles at the time of fracture, as follows: While the inward and outward rotators of the hip pull mesially on their osseous insertion (the great trochanter), thus holding the fracture surfaces of both capital and distal fracture fragments firmly together like the cogs of cog-wheels (fig. 2, left), at the same time the more powerful muscles of the thigh force the distal fragment upward, thus rotating the fracture end of the spherical capital fragment upward and consequently the fovea side of this head fragment downward, separating the origin and insertion of the ligamentum teres and in this way tearing or evulsing this relatively weak structure.

Frederick Henry Gerrish,[5] the anatomist, made the following statement:

> The ligamentum teres (round ligament) is not round, but a triangular, flat interarticular band attached by its apex to the upper half of the depression on the head of the femur, and by its base to the transverse ligament and the margins of the cotyloid notch, the ischial portion being the stronger. It is surrounded by synovial membrane, and represents a migrated portion of the pectineus muscle. It conveys a small branch of the obturator artery to the head of the femur. It is torn in dislocation of the femur. . . . The ligamentum teres is put on the stretch in flexion with abduction or outward rotation, or both, but it is too weak to be of use in resisting these movements or in strengthening the joint.

Dr. Gwilym G. Davis,[4] the eminent surgical anatomist, stated:

> The ligamentum teres is composed of synovial and connective tissue. It is not strong and ruptures at about 14 kilos (30 pounds); the small artery it contains affords nourishment for itself alone, only a very small amount of blood going to the head of the femur. Bland Sutton regards it as a vestigial structure and a regression of the pectineus muscle. It is too weak to add much to the strength of the joint, and the view of Allis that its function is to distribute the synovial fluid and act as a lubricating agent is probably correct. The great pressure to which the articular surfaces of the hip-joint are subjected requires special lubrication and this is furnished by the ligamentum teres and Haversian gland.

From these studies, it is deduced that in 417 of 419 cases of subcapital fracture the weak ligamentum teres was destroyed by torsion or rotation incident to the explosive displacement at the time of fracture. The extreme force either evulsed the ligamentum teres from the acetabulum or head of the femur (more frequently the former occurs) or ruptured the ligament by a twisting or shearing motion. After many months or, often, many years, it is difficult to deduce accurately the cir-

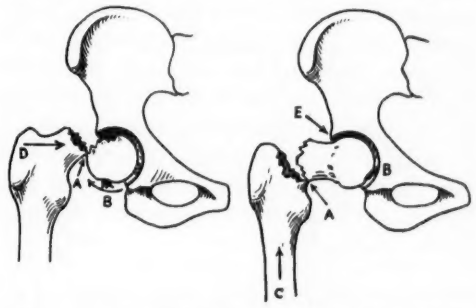

FIG. 2. The drawing on the left illustrates fracture near the neck of the femur, with rupture of the ligamentum teres. The drawing on the right shows fracture occurring farther out on the neck of the femur. When the intense involuntary muscle spasm incident to a fracture thrusts the femoral shaft upward, as indicated by the arrow at *C*, in transtrochanteric fractures, the capital fragment is prevented from rotating upward sufficiently to rupture the ligamentum teres at *B* because of impingement of the neck of the femur on the rim of the acetabulum at *E*.

cumstances associated with the destruction of the ligamentum teres. Varying degrees of fibrous adhesions to the periphery of the head are sometimes found, but when severed in removal of the head they have never been found to bleed to any appreciable extent, thus indicating that they have not been a source of blood supply to the capital fragment.

If the teres ligament has not been ruptured, there is every reason to believe that its continuity would serve to conduct induced collateral circulation to the capital fragment, even if anatomically the blood vessels were meager in it. The fracture is wholly within the

hip joint, with little, if any, soft tissue about the bone at the point of the fracture other than the torn synovial membrane on the neck itself.

It is my firm belief that in those cases in which there is nonunion with marked bone absorption the destruction of the ligamentum teres at the time of fracture was the determining factor in the failure of union. In other words, one is justified in concluding that when the ligamentum teres is destroyed the capital fragment becomes practically a joint mouse. Because of the intervening joint cavity and intervening synovial fluid between the fracture surfaces, no blood supply can come to it as in other fractures from adherent overlying muscles or soft parts. It has also been pointed out that the synovial fluid flowing between the fracture fragments inhibits callus formation.

REPORT OF CASE

The following case under my care at the present time is illustrative:

The patient sustained at different times a fracture of each hip. At the time of the first fracture, that of the right hip, there was no treatment. The patient lay in bed for a while, and the hip united satisfactorily. Four years later the patient suffered a fracture of the left hip. The hip was treated and put in a Whitman spica cast by a competent surgeon, and roentgenograms taken at the time indicated excellent apposition of the fracture fragments. Union did not follow. Fourteen months after the time of fracture the patient was seen by me, and a reconstruction operation was performed. The capital fragment was removed, a wedge being made of it to reconstruct the lever at the top of the femur. On removal of the head, it was found that the ligamentum teres had been destroyed, undoubtedly at the time of fracture.

The point to be raised in this case is that it is reasonable to suppose that when the right hip was fractured the ligamentum teres probably was not destroyed and served as a scaffold for collateral circulation to the otherwise anemic capital fragment, and therefore union took place. When the left hip was fractured, it is known that the ligamentum teres was torn, thus causing the blood supply to be cut off from the capital fragment, with no tissue continuity for its reestablishment. In spite of efficient Whitman treatment and immobilization for three months, the fracture did not unite.

TYPES OF FRACTURE

It can be further deduced that only in central or subcapital fracture are the mechanics such that the capital fragment is permitted to rotate under the superior edge or roof of the acetabulum. When primary impaction occurs, there naturally cannot be extreme rotation or twisting of the head; therefore, the ligamentum teres does not become torn or evulsed. This undoubtedly is one of the principal reasons, if not the determining reason, why such fractures do not unite. By the same token, it does not follow that secondary artificial impaction by the surgeon is of the same value, because rupture of the ligamentum teres may already have taken place.

When the fracture occurs farther out in the neck of the femur, especially when it is transtrochanteric, the fragment is so long that it cannot become rotated or twisted under the rim of the acetabulum (fig. 2, right). Therefore the ligamentum teres does not suffer. Also, basal and transtrochanteric fractures are partly or completely extra-articular—the adherent soft parts which are always present at the distal end of the capital fragment will prevent its rotation or torsion from reaching such a degree as to rupture the ligamentum teres. Possibly more important still, these adherent soft parts serve to convey blood vessels to the fracture junction of both fragments. The prognosis in regard to union in such fractures is good, because the same favorable conditions are found as in other fractures,

such as those of long bones, in which one frequently sees the sole callus deposited in the surrounding soft parts as a bridge between the fragments, and no evidence whatsoever of callus between the fractured surfaces. In subcapital fractures the space between the fracture surfaces is filled with synovial fluid; this is the only place where callus would occur, as there are no adherent surrounding soft parts (as in other fractures) to bring blood supply for callus formation or serve as a scaffolding in which the callus forms.

In this regard, Cunningham[3] stated:

> The fibrous stratum is reflected on to the neck of the femur, and it clothes the bone as far as the margin of the articular cartilage which covers the head. Along the line of reflection some fibres of the fibrous stratum proceed proximally on the neck of the femur and raise the synovial layer in the form of ridges. These fibres are termed the retinacula or cervical ligaments.

This enveloping band of fibrous tissue is about ⅛ inch (0.3 cm.) in thickness and firmly adherent to the femoral neck. There is scarcely a chance of the avoidance of its complete rupture from the displacement associated with a fracture of the neck except in those primarily impacted. It has no callus-forming influence. Cotton was the first to point out that synovial fluid acts as an inhibitor to callus formation. An intense acute traumatic synovitis with joint distention must complicate subcapital (intra-articular) fracture, separating the fragments by forcing the synovial fluid between them. This supposition is further supported by the constant finding, at operation on patients showing nonunion, of synovial fluid between the fragments.

It is clear that it is impossible to determine at the time of subcapital unimpacted fractures whether the ligamentum teres suffered rupture. Of all fractures of this type coming under my care, only in those in which a reconstruction operation was performed because extensive bone absorption necessitated removal of the femoral head has the opportunity been afforded to check whether this ligamentum was torn or not. Among such cases the percentage of those with destruction has been very large—over 99. It is apparent that these findings have no bearing on those cases in which union occurs, following any type of treatment, or on those in which nonunion occurs without extensive absorption of bone, in which cases the bone-graft peg was employed and therefore no check was made as to whether the ligament suffered rupture or not.

TREATMENT

Since it is impossible to determine at primary treatment whether the capital fragment has been entirely cut off from all blood supply, it is urgent that until this is learned the initial treatment in all cases be designed to bring blood supply to this fragment; or, in the event that some other conservative or operative type of treatment has been employed, the surgeon should be ever vigilant to detect the earliest evidences of impending nonunion as disclosed by x-ray evidence of a slight change of relation of the fracture fragments or bone absorption at the fracture junction. There is abundant evidence to prove that many surgeons are too prone to conclude that union has occurred when many times it has not.

In this event, if the case is operable, prompt action should be taken and a bone-graft peg implanted after removal of the metal gadget, if one has been used.

The trustworthiness of the bone-graft peg has been proved by the fact that it was originally employed in much more unfavorable cases than those of fresh fractures, namely, cases of nonunion.

Use of the bone-graft peg in the treatment of selected cases of ununited fractures has resulted in about 94 per cent cases of bony union. About the same time that I published my first cases, Dr. Willis C. Campbell, using the

same method, published statistics that were even a little better than mine. The significance of these results is extremely important, since Dr. Campbell and I were dealing with cases much more unfavorable than those of fresh fractures, first, because they were cases of nonunion, or pseudo-arthrosis, second, because the capital fragment had become practically a joint mouse, and, third, because the urge of primary repair had long ceased to exist.

It is further interesting to note that, through a fault in technic on my part in failing to approximate the fragments in three of these cases, I learned something of great significance concerning the function of the autogenous bone-graft peg.

In these cases the hiatus between the fragments, varying in extent from 1/2 to 2/3 inch (1.27 to 1.7 cm.), was spanned within the joint by the bone peg alone (fig. 3*A*). X-ray study at a later postoperative date showed that the peg in each instance constantly increased in size until it finally filled in the hiatus completely, and that, in spite of the fact that the fragments were separated and the peg was situated in the joint cavity with synovial fluid about it, the blood vessels extended through it from the trochanter fragment to the capital fragment, the peg by its inherent osteogenesis having filled this space between the fragments, with resultant union (fig. 3*B*). The importance of this observation is self-evident as showing the potentiality of the bone graft under most unfavorable conditions. If a metal agent had been used, there would not have been a chance of union in any of these cases. In this respect, however, it should be commented that in many instances I have observed that a graft has filled in spaces many times more extensive than those in the cases cited, even to as much as sixteen times the dimension of the widest hiatus, the only difference being that the long grafts were surrounded by soft tissue instead of synovial fluid.

Bone, being a supportive and relatively undifferentiated tissue, is able to suffer the absence of its blood supply for a considerable time without adverse effects, for the reason, among others, that it is extremely favorable for transplantation. The rapid and profuse vascularization of a bone graft is one of the most striking features encountered. When a portion of the complete diameter of a long skeletal bone has been replaced by a massive graft of much smaller diameter, not only will the whole shaft be restored to its complete diameter and strength, but also a completely vascularized marrow cavity will develop. The same phenomenon occurs in the use of a bone graft as a terminal structure, such as in building digits, in which a tibial bone graft is inserted into a tubular skin graft to restore a finger or thumb. In this instance there is a physiobiologic demand for blood at the distal end of this bone graft, and in response a collateral circulation is developed in the whole length of the graft to the degree of a marrow cavity with its incident blood vessels. The analogy is identical to that of the peg graft conveying blood to the anemic femoral head from the very vascular cancellous tissue of the trochanter (fig. 4). These characteristics, as well as the osteogenic capacity of the autogenous bone graft peg together with its mechanical strength (for immobilization purposes), determines it to be the ideal means of treatment in operable cases of both fresh and nonunited fractures of the central intra-articular portion of the neck of the femur. It is the only answer to the three needs in the treatment of such fractures, for (1) it furnishes ideal immobilization, (2) it provides a living scaffold for vascularization to the anemic head fragment, and (3) it brings an osteogenic, callus-forming

material to the fracture junction.

To demonstrate this phenomenon, Sir Arthur Keith, the practical pathologist of England, prepared an extensive number of specimens that are on exhibition in the Museum of the Royal

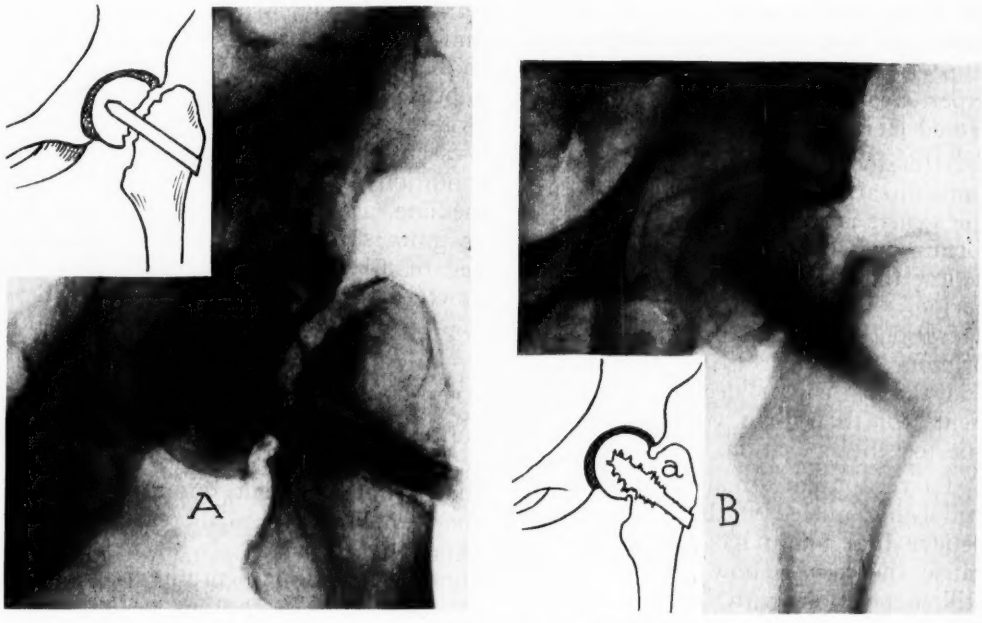

FIG. 3. *A*, x-ray showing bone peg in place. *B*, same case as *A*, four and one-half months later. The x-ray, with the key schema, demonstrates the marked enlargement of the inner two thirds of the graft. Bone growth is seen extending coincidentally from the trochanter.

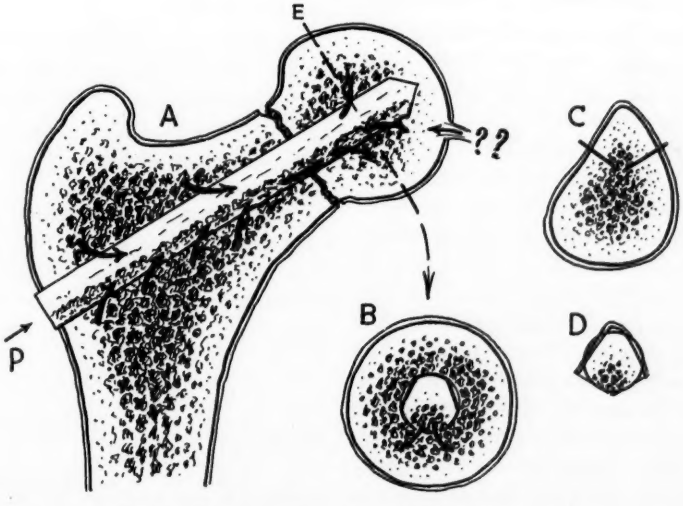

FIG. 4. Diagram illustrating blood supply to the femoral head (*A*) with peg graft (*P*) in place. *B*, *C* and *D* are cross-sections.

College of Surgeons in London. The study of these specimens is most profitable. They were prepared and injected to show the profuse and early vascularization of bone grafts in general. In putting in bone grafts to take the place of portions of shafts of bone, my own experience has, in many instances, confirmed Keith's observations.

After most operations, the period of immobilization in double plaster of Paris spica casts is twelve weeks. The callus-forming capacity of the femoral bone is so low that one must allow a generous period. Whether the bone graft peg operation should be performed as the primary treatment is for the surgeon and the patient to decide. Some patients, of their own volition, have requested the operation.

To recapitulate, many surgeons are still being misled in their optimism to believe that union has taken place because the x-ray shows the fragments still in position, with fracture surfaces in close apposition, particularly if a metal gadget has been employed. In a recent case, three consultants gave the opinion at the end of ten months that union was solid, when, as was proved later, no union whatsoever had occurred.

It is of great importance with every type of treatment (except when the autogenous graft has been used), especially when any of the various kinds of metal fixation agents have been used, for the surgeon to be eternally vigilant in watching for the earliest evidence of the beginning of nonunion. Any change of position in the relation of fragment to fragment, even of the slightest degree, is evidence that union is not taking place. Soon proof will follow with bone absorption at the fracture junction indicating that there is an inadequate or total lack of blood supply, because of the rupture of the ligamentum teres as well as the retinacula by a twist or rotation of the head of the femur at the time of fracture. Repeatedly in the literature, mention has been made of the possible blood supply coming from the untorn portion of the capsule. This can refer only to the retinacula, which are not strictly capsule and which because of anatomic relationship are most likely to be completely ruptured by even slight displacement. In the latter event, the capital fragment is essentially a joint mouse. Under such conditions, if union is to be secured immediate action is urgent. With the fragments in good position, a bone-graft peg of at least ½ inch (1.27 cm.) diameter should be inserted.

SUMMARY

The outstanding obstacle to union of subcapital fractures of the neck of the femur is destruction of blood supply to the capital fragment, due to rotation of the femoral head in all cases without primary impaction, with consequent rupture of the ligamentum teres and the retinacula. The author found these structures ruptured in 417 of 419 cases when removing the femoral fragment in his reconstruction operation for nonunion with marked absorption of bone, with infiltrated synovial fluid between the fragments.

Studies have shown as low as 22 per cent cases of union with treatment by various methods. Treatment rests on: (1) reduction and fixation; (2) provision for conduction of blood to the anemic capital fragment; (3) provision of an osteogenic influence to the fracture junction. A tibial bone graft peg at least ½ inch (1.27 cm.) in diameter meets these requirements as no other plan does.

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RÉSUMÉ

Fractures sous-capitales du fémur

L'obstacle principal à l'union des fractures sous-capitales du col du fémur est la suppression de l'apport sanguin au fragment capital. Cela est dû à la rotation de la tête fémorale dans tous les cas sans pénétration, sans enfoncement, sans enclavement primitif. Cette rotation entraîne la rupture du ligament rond et des rétinacules. L'auteur constata la rupture de ces tissus dans 417 sur 419 cas qu'il a opérés par sa méthode réconstructive pour manque d'union avec absorption osseuse marquée et infiltration de synovie entre les fragments.

Les différentes méthodes employées dans les cas de cette nature n'obtiennent l'union osseuse que dans 22 pour cent des cas. Le traitement demande: (1) la réduction et la fixation, (2) de pourvoir à l'apport sanguin au fragment capital, (3) de pourvoir une influence osteogénique du siège de la fracture. Un greffon de 1.27 cm. de diamètre prélevé sur le tibia nous permet plus que toute outre méthode de remplir ces desiderata.

ZUSAMMENFASSUNG

Subcapitale Brüche des Schenkelhalses

Das Haupthindernis für eine Vereinigung und Heilung von subcapitalen Schenkelhalsbrüchen ist die Verminderung der Blutzufuhr zum proximalen Fragment, verursacht durch die Drehung des Schenkelkopfes, die in allen Fällen ohne Impaktion erfolgt und die einen Riss des Ligamentum teres und der Retinakula zur Folge hat. Der Autor hat diese Risse in 417 Fällen bei 419 Operationen vorgefunden, wenn er im Verfolge seiner Wiederherstellungsoperation bei Nichtvereinigung der Fragmente eine Entfernung des Fragmentes vornahm; er fand gleichzeitig eine beträchtliche Absorption von Knochen und das Vorhandensein von eingedickter Synovialflüssigkeit zwischen den Fragmenten.

Bei Behandlung mit den verschiedensten Methoden konnten nur bis 22% Wiedervereinigung der Fragmente erzielt werden. Das Verfahren des Autors besteht in: (1) Reduktion und Fixation; (2) Herstellung einer Blutversorgungsmöglichkeit für das anämische Fragment; (3) Herstellung eines Anreizes zur Knochenbildung an der Bruchstelle. Ein Knochenspan von der Tibia von 1.27 cm. Diameter erfüllt diese Bedingungen besser als jede andere Massnahme.

SUMARIO

Fractura subcapital de la cadera

El obstáculo prominente de la unión de la fractura subcapital del cuello del fémur es a destrucción de la irrigación sanguínea del fragmento capital, debido á la rotación de la cabeza femoral en todos los casos sin impacción primaria, con la ruptura consecuente de los ligamentos y la retinácula. El autor encontró estas estructuras rótas en 417 de 419 fracturas, cuando haciá la operación de reconstrictión y extraía el fragmento femoral en los casos que no habiá union y que habiá marcada absorción del hueso, con infiltración de fluido sinovial entre los fragmentos.

El estudio ha mostrado resultados tan bajos como 22% en los casos de union con tratamiento por distintos métodos. El tratamiento incluye: (1) redución y fijación; (2) medidas para conducir la sangre al fragmento capital anémico; (3) medidas para ejercir una influencia sobre la formación osteogenética de la

unión de la fractura. El injerto de una espiga de hueso de la tibia, por lo menos de 1.27 cm. de diámetro, llena estos requisitos como ninguna otra operación.

RIASSUNTO

Fratture sottocapitali del femore

La maggiore difficoltà nell'unione delle fratture sottocapitali del collo del femore è la minorata circolazione sanguigna del frammento capitale, dovuta alle rotazione della testa femorale, con conseguente rottura del ligamento teres e i retinacula. L'autore riscontro la rottura di questi tessuti in 417 dei 419 casi che ha operati col suo metodo ricostruttivo, per mancanza d'unione, con assorbimento osseo marcato, e infiltrazione sinoviale tra i frammenti.

La cura consiste: (1) riduzione e fissazione, (2) cercare di migliorare la circolazione sanguigna del frammento capitale anemico, (3) stimolare l'influenza osteogenica della frattura. Un innesto osseo di 1.27 cm. di diametro prelevato dalla tibia risponde nella migliore maniera ai requisiti sopra accennati.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Kny - Scheerer Instruments

Kny-Scheerer Corporation will present in Booth 30 of the convention hall an exhibit and demonstration of the Improved Albee Bone Mill, Dr. Albee's new oscillating saw attachment for laminectomies, circular osteotomies and osteoplastic skull work. See the new Moreira Set for Hip Fractures, devised by Dr. F. E. Godoy Moreira, São Paulo, Brazil. Also on display are many new surgeons' instruments, in both stainless and chrome.

Traction Table Demonstration

Featured in the exhibit of the Comper Manufacturing Company, at Booth 20 of the International Assembly exhibits will be the Albee-Comper Traction Table, in which Dr. Fred H. Albee has departed from the more conventional standards of fracture table design of adopting those advantages of the surgical operating table which most usefully apply to orthopedics and combining with them a simple and efficient apparatus for giving comprehensive orthopedic postures under traction as well as providing for fluoroscopic and x-ray examination before, during and after the operation.

Important Exhibit of Vitallium Appliances

At Booth 11 of the convention hall the Austenal Laboratories, Inc., will display a complete line of plates, nails, screws and special appliances made of vitallium. These fracture appliances have been demonstrated to be immune to body fluids, compatible with tissue, and do not interfere with normal bone growth. No other metal heretofore used in the internal fixation of fractures combines the same freedom from irritation with the requisite strength.

Metabolism Equipment

The Jones Metabolism Equipment Company will present in convention Booth 26 the most modern metabolism apparatus on the market. The Jones Motor-Basal eliminates corrections for barometric pressure and room temperature, and eliminates calculations. It is so simple that any one can learn to run it in a short time and yet is accurate enough to meet the most exacting requirements. An exclusive geometric device checks each test, eliminating possible error by the human element. It is guaranteed to perform with an accuracy greater than 99 per cent for the lifetime of the purchaser.

GASTRECTOMY FOR VARIOUS CONDITIONS*

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and
HAROLD E. CLARK, M.D., F.A.C.S.
NEW YORK

ALTHOUGH we are not devoted to new and unusual instruments we are much impressed by the instruments for gastro-intestinal resection known as the De Petz and the Neuffer-Ulrich, modified by Professor Friedrich, along with the smaller and more recent one, the Von Seemen. These instruments consist of crushing blades with concealed staples or clips that are forced into the crushed area in two rows sufficiently separate to enable one to cut between with a cautery knife or the ordinary scalpel. Furthermore, the clips, due to an ingenious female blade, are forced together at this point to resemble a pretzel. The points thereby curve inward and upward so that there is no scratching or penetration. While most of these clips will be passed out through the intestinal canal, we have seen clips in x-ray pictures taken of the stomach twelve or eighteen months later with evidence of no more harm than if nonabsorbable antiseptic suture material was used.

There are many advantages in the use of these instruments, as observed in over 95 patients on whom they were used. Chief among these is hemostasis, a nonleaking closure of the distal and proximal portions, which eliminates many extra instruments, packs and assistants. With the use of the machine the severed ends are covered with a piece of gauze and placed outside the immediate operating area while other work progresses. This can be accomplished without thought of hemorrhage or infection due to spilling. The clips are buried with two sets of catgut sutures to a point within 2 inches (5.08 cm.) of the greater curvature. This area is left by the cloaca or fenestra which, on the gastric side, is made by excising this 2 inch area fully ½ inch (1.27 cm.) in breadth as the anastomosis advances.

As to the amount to be excised, in all cases of ulcer one half to two thirds or more of the stomach is removed. In cases of marginal ulcer as much of the tissue is removed as is necessary to give a clean area proximal to the original gastro-enterostomy opening. In cases of carcinoma one must remove well into healthy tissue, or a complete gastrectomy may be demanded.

In our series of over 90 cases up to March 1, 1938, there were 89 resections, with use of one or the other of these machines. Of these patients, 18 (15 males and 3 females) were operated on for duodenal ulcer, with a mortality of 27 per cent; 9 (all males) were operated on for marginal ulcers, with 4 deaths, a mortality of 44 per cent; 43 (22 males and 21 females), whose average age was 55 years, were operated on for carcinoma of the stomach, with 12 deaths, a mortality of 28 per cent; 17 (14 males and 3 females) were operated on for gastric ulcer, with a mortality of 11 per cent; 2 were operated on for sarcoma, with no deaths. In this series there were 4 cases of linitis plastica. An interesting observation was the fact that the average age of the females was ten years less than that of the males.

* Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct. 13, 1938.

TUMORS

A Krukenberg tumor was found in one patient four years after her original operation, a gastric resection. At that time the pathologist reported an ulcer, but the operator made a diagnosis of carcinoma. When the patient was reopened for a pelvic tumor (which proved to be a Krukenberg tumor) the entire abdominal cavity was found to be studded with carcinomatous metastases. The original specimen, fortunately, had not been destroyed, and on careful reexamination it was pronounced carcinoma.

Of the carcinomas, there were 26 adenocarcinomas, 17 of which had metastases, and 1 of which had perforated; 6 cases of scirrhous carcinoma, with 5 showing metastases, and 7 cases of colloid growth, with 5 showing metastases. One growth was considered to be adenocarcinomatous implantation on an old ulcer.

In a number of patients the gastric symptoms were negative. Others presented weakness as the only symptom. One case without symptoms was discovered in a routine insurance examination. Five patients gave a family history of carcinoma. To us, an outstanding symptom of gastric carcinoma is the total loss of appetite which we have observed occurring early in the disease. The red cell count was found in this series to be 3,500,000 or less, and the hemoglobin content about 70 per cent, falling as low as 29 per cent. Melena was observed in less than 25 per cent of the cases.

Sarcoma was found in 2 cases, giving an incidence of 2.2 per cent. This percentage is rather higher than the usual quotation of less than 1 per cent.

CASE 1. A man 46 years of age gave a history of weakness over a period of six weeks, dyspnea on exertion and left epigastric discomfort related to food intake. The red cell count was 2,700,000, with a hemoglobin content of 42 per cent. The pathologic report was myoblastic sarcoma. There were no glandular metastases. An x-ray of the chest nineteen months post operatively showed infiltration of both lungs. Death occurred twenty months after operation.

CASE 2. A woman 47 years of age gave a history of gastric pain over a period of nine months, with nausea and vomiting and a loss of 50 pounds (22.7 Kg.) in eighteen months. There was marked anemia. At operation in November 1937 a lymphosarcoma of the pylorus was found with invasion of the serous coat and omentum. At present the patient is being given x-ray treatments, as this type of growth is said to be benefited by x-rays.

GASTRIC ULCERS

There were 17 cases of gastric ulcer, 2 of which occurred in females. Two deaths were reported, both occurring in males. In 10 instances the lesion was found at the lesser curvature, being large in all of them. One patient presented multiple ulcers. In 3 instances perforations into the gastrohepatic omentum had occurred and in 2 into the pancreas. Chronicity was the paramount state and, also, recurrent attacks too numerous to mention. Two patients reported lapses of eight and twelve years, respectively, between attacks, the symptoms varying in duration from three months to twenty-three years. All had been under a dietary regimen for years. Some had been hospitalized one or more times. Many had adhered rigidly to a diet, only to meet with failure. Several had had previous gastric and other operations. One gave a history of 4 previous operations, the pertinent features being a cholecystectomy and gastrostomy in July 1925 and adhesions in 1932. An x-ray taken in 1937 showed 40 per cent retention.

A rather constant finding in the series was deficiency in urea nitrogen, chlorides, sugar and carbon dioxide on admission, in other words, a picture of starvation. The lowest red cell count in this group was 2,850,000, with a hemoglobin content of 42 per cent.

Of the 2 patients in this group who

died, one, aged 69, in thirty-two hours became cyanotic, with death resulting immediately. The other patient, aged 48, in eighteen hours developed a sudden rise in the pulse rate, with death resulting. Necropsies were not obtained in either case.

As already stated, the operation consisted of a resection, one half to almost complete, in all the cases in this series. The anastomoses were made after the method of Polya or Hofmeister (there were fewer of the former), with Balfour's antecolonic procedure on a few occasions. We are inclined to the Hofmeister method, although for years the Polya method was our choice. In the Balfour resection we have always added an entero-enterostomy, although there is a rapidly growing opinion that this is not necessary. Nevertheless, we feel most satisfied when the entero-enterostomy has been done. Shortly after Balfour described his antecolonic operation, the first author [J. F. Erdmann] was accustomed to call attention in his clinics to the possibility of the development of a jejunal trap, and he demonstrated such a condition in one of his patients. Since that time he has always added a jejunojejunostomy.

For six or eight years he has had a 16 or 18 F Levine or other type of tube introduced before the anesthesia was begun. During the operation extreme care is taken not to include the tube in the amputation. Before the completion of the anastomosis, 6 to 10 inches (15.24 to 25.4 cm.) of the tube are placed in the distal part of the jejunum. This, if perforated as the Wangensteen tube, will allow both feeding into the duodenum and siphonage of the stomach. This is exceptionally satisfactory to the surgeon and gives great relief to the patient. Also, the feeding of fluids into the duodenum, even in the period immediately after operation, relieves the patient of much puncturing for infusions or clyses. This tube is kept in position for four to eight days, depending on the postoperative reaction.

Dehiscence of the walls of the inverted duodenal stump occurs, we believe, more frequently than is cited in the literature. It has occurred in 2 patients in the past twelve months.

CASE 1. Three weeks after discharge from the hospital a man had sudden pain in the epigastrium after a hearty meal. The operation had been done six weeks previous to the attack. He was readmitted to the hospital, and emergency operation revealed complete dehiscence with a secondary cavity, the wall of which had perforated into the peritoneal cavity. Resuture was accomplished with difficulty, but the outcome was successful. However, complications arose: first, a subhepatic abscess, then a subdiaphragmatic abscess with pleurisy and empyema. After nine transfusions the patient recovered from these complications and was discharged. He gained 40 pounds (18.1 Kg.). He returned to the hospital over three months later with a right intralobar abscess, and on Sept. 16, 1938, resection of 3 inches of the seventh rib was done.

CASE 2. A man who had had a resection for a marginal ulcer had a sharp abdominal pain during the third postoperative week while in the hospital. On exposure in an emergency operation duodenal dehiscence was found. The wound healed, with ultimate recovery.

In reviewing some of the work in gastric resection in a large hospital we are inclined to the belief that this condition is not so rare as we would like to think.

A factor in the etiology may be the backing up of the duodenal contents, which makes pressure to such a degree that the walls are forced apart in the early days of catgut absorption. Catgut at times absorbs earlier than desired on account of the intestinal chemistry, and, again, as the first author has maintained for years in discussing abdominal wound dehiscence, tissue hunger due to poor blood condition resulting from loss of food intake produces rapid absorption of the catgut. One cannot feel that carelesss or reckless apposition of the walls is practiced by the operators.

MARGINAL ULCERS

One repair in the practice of a surgeon teaches the difficulties that surround him, to say nothing of the many risks of infecting the peritoneal cavity. The adhesions we prefer when doing a gastro-enterostomy at times require careful and tedious dissection before the jejunum can be separated from the stomach and the stomach from the omentum so that resection can be accomplished in healthy tissue.

The anastomotic hole in the jejunum must be closed or a resection done with anastomosis. When possible, the first author sews up the opening in the jejunum after trimming the edges from all the diseased structure. He then sews up the gap from side to side, never longitudinally. The new jejunogastric anastomosis is then made in a section of the jejunum 2 to 4 inches (5.08 to 10.16 cm.) distal to the suture line. In other instances, when a resection is called for, an end-to-end suture is made, again 2 to 4 inches distal to the anastomosis.

Before the operation we check the blood chemistry and the general blood pictures, with grouping for transfusions, etc., give parenterally fluids such as 3 per cent glucose in saline solution for clyses and 5 to 10 per cent for infusions, do gastric lavages to note the residue as to its make-up in the way of food contents, blood or pus, and have a careful analysis of the urine and a thorough examination of the chest made.

Immediately before the anesthesia we introduce a 16 or 18 F Levine tube (Wangensteen type preferably) into the stomach and anchor it on the face with adhesive tape.

We finish the operation by placing in all abdominal sutures to within ½ inch (1.27 cm.) of the terminal portion, where a rectal tube had previously been placed. After the peritoneum and fascia have been sutured we pour through this tube into the peritoneal cavity 500 to 1,500 cc. of saline solution, heated to about 105 or 110 F. The rectal tube is then removed and the abdomen closed with a final set of retention sutures. This treatment of the pertioneal cavity—the introduction of fluids—has been carried on by the first author over a period of ten years, and he feels that he has had excellent results and does not have to consider immediate infusions, clyses or transfusions. This treatment is also an excellent diuretic and aids in combating shock.

The silk retention sutures aid in preventing dehiscence of the abdominal wound. This condition of dehiscence has been in the surgical limelight for several years. Recently a discussion was presented before the surgical bodies of the New York Academy of Medicine, and each author believed that his argument was the solution. As has already been stated, the first author has taught for many years that the hunger of the tissues in these patients destroys the catgut in a short time. He has seen a double row of no. 2 chromic gut absorbed, in a gallbladder incision 6 inches (15.24 cm.) in length, within seventy hours, with only 3 inches (7.62 cm.) of a single strand left at the time of resuture. The hunger of the tissues is but a sidelight of the starved condition of the patient, whose blood shows a hemoglobin content below par and a red cell count far below normal.

He does not issue routine instructions subsequent to a gastric operation bearing on the parenteral fluids but he does instruct his assistants to give saline solution and tap water, equal parts of each, in doses of 6 ounces (177.4 cc.) every four hours per rectum. This injection or enema is given very slowly, five to ten minutes being required for its introduction. For some time he has been of the opinion that some of the cases of thrombus and embolus have

been due to or assisted by the too liberal treatment by the staff, with either intravenous injections or clyses.

Fluids are given in his cases of resection within the first twelve hours; not less than 1 ounce (29.6 cc.) is tried, and this is rapidly increased to 2 or 4 ounces (59.1 or 118.3 cc.). We always watch for a turning of the head with expectoration of small amounts of fluid, indicative of gastric dilatation, and as soon as this occurs, fluids by mouth are stopped and a tube is inserted to observe the retention. Should there be retention, intake by mouth is stopped for six to eight hours and then tried again.

One death occurred from peritonitis due to a perforation and not the operation and the others from pneumonia and/or cardiac complications.

CONCLUSIONS

We do not operate for ulcers unless the patient has been under medical observation with a final statement that treatment has accomplished no satisfactory result.

We operate for repeated or recurring hemorrhages, evidence of obstruction or a perforation becoming imminent, and for acute perforations.

We operate for persistent pain and distress, particularly in cases of marginal ulcer.

We operate in all cases of marginal ulcer, as our experience has taught that this variety does not respond to treatment so often as it perforates. When perforation occurs, the occasion is more pernicious than in the case of duodenal ulcer perforation.

SUMMARY

The authors describe their experience in 89 cases of duodenal ulcer, marginal ulcer, gastric ulcer, or carcinoma or sarcoma of the stomach, in which resection was done. They used instruments consisting of crushing blades and clips for stapling, which they found advantageous for hemostasis and nonleaking closure, as well as time- and labor saving.

Silk retention sutures are preferred to catgut, as the latter may be absorbed too soon, owing to tissue hunger.

Introduction of fluids into the peritoneal cavity after gastric operations has been found to benefit.

122 East Seventieth Street.

RÉSUMÉ

La Gastrectomie

Les auteurs ont pratiqué la résection gastrique dans 89 cas de ulcère gastrique, ulcère duodénal, carcinome ou sarcome de l'estomac. Ils emploient les lames écrasantes et les agrafes et ainsi obtiennent une meilleure hémostase et une fermeture plus exacte. L'opération est effectuée en moins de temps et avec moins de difficultés. Ils préfèrent la soie au catgut, ce dernier parfois étant absorbé prématurement, les tissues ayant faim. L'introduction de fluides dans la cavité peritonéale est une mesure bienfaisante.

ZUSAMMENFASSUNG

Gastrektomie

Die Autoren beschreiben ihre Erfahrung in 89 Fällen von Duodenal-, Marginal- and Magengeschwüren, Magensarkom und -Carcinom, in denen Resektion vorgenommen worden war. Sie benutzten spezielle Pinzetten und Klammern, die sie als vorteilhaft für Blutstillung und nichtnachsickernden Verschluss, sowie zeit- und arbeitsparend befanden.

Seidenretentionsnähte wurden Catgut gegenüber vorgezogen, da letzteres zu bald absorbiert wird infolge des "Hungers" der Gewebe.

Die Verabfolgung von Flüssigkeiten in das Peritoneum nach Magenoperationen hat sich als vorteilhaft erwiesen.

SUMARIO

Gastrectomia

Los autores describen sus experiencias en 89 casos de úlcera duodenal, úlcera marginal, úlcera gástrica, carcinoma ó sarcoma del estómago, en los cuales se hizo resección. Ellos usaron instrumentos consistentes en ramas ó cuchillos de aplastamiento y puntos metálicos para suturas, los cuales encontraron muy ventajosos para hacer la hemostasia así como para evitar filtraciones; tambien se ahorró mucho tiempo. En los puntos de retención la seda fué preferída al catgut, pues esta última se absorbe muy rápido debido al hambre de los tejidos. La introducción de líquidos dentro de la cavidad peritoneal después de las operaciones gástricas se ha encontrado ser beneficiosa.

RIASSUNTO

Gastrectomia

Gli autori descrivono 89 casi di ulcera duodenale, marginale e gastrica, carcinoma e sarcoma dello stomaco, in cui la resezione fu eseguita. Essi usano strumenti che consistono di lame chiaccianti e punti metallici di sutura, ottenendo una migliore emostasi e una chiusura più esatta. Suture di seta sono preferibili al catgut, perche quest'ultimo può essere assorbito prematuramente. L'introduzione di fluidi nella cavita peritoneale dopo operazioni gastriche è assai vantaggiosa.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Hoffmann - La Roche Contributions

Will the gaunt spectre of dynamic ileus stalk through the convention meeting halls? Hoffmann-La Roche predict not, inasmuch as the feature of their exhibit at convention Booth 12 will be the latest and most efficacious agent for combating postoperative intestinal atony and atony of the urinary bladder: Prostigmin Methylsulfate, N.N.R. The Nutley firm will also exhibit other recent "Roche" contributions to materia medica proving particularly serviceable to surgeons.

Strasenburgh New Products

The R. J. Strasenburgh Company will demonstrate some unusual products in Booth 18 of the International College of Surgeons Assembly, technical exposition. Pryocawz is a medicated gauze especially adapted for wounds and abrasions. The Strasenburgh products consist of all types of standardized pharmaceuticals, also many specialties. Ask for a catalog.

Cameron Surgical Specialties

In Booth 14 of the International College of Surgeons exhibit hall the Cameron Surgical Specialty Company will show the new and inexpensive models of Cameron Cauterodyne (Radio Frequency), which provide safe and effective cutting, coagulation, desiccating and fulgurating with a quick-healing, bloodless field for all classes of surgery. Latest developments in electrically lighted lamps and instruments for all phases of surgery and diagnosis will also be demonstrated. See the new DeLuxe Rectal Diagnostoset.

Stainless Steel Instruments

Scanlan-Morris Company, of Madison, Wis., manufacturers of sterilizers, operating tables, surgical lights and surgical sutures, and the exclusive American agents for the A. B. Stille-Werner Company, of Stockholm, Sweden, will exhibit in Booth 48 of the International Assembly display genuine Stille stainless steel surgical instruments.

CYSTIC HYGROMA

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THE diagnosis of cystic hygroma is simple; it is the only brilliantly translucent swelling of the neck. On pathologic examination the swelling is found to consist of an aggregation of cysts like a mass of soap bubbles. The larger cysts are near the surface, while the smaller ones lie deeply and tend to infiltrate the muscle planes (fig. 1).

ETIOLOGY

A cystic hygroma has no connection with either the bronchial or the thyroglossal apparatus. The latter structures are epiblastic in origin and consequently have an epithelial lining. A cystic hygroma is lined by a single layer of endothelium having the appearance of mosaic, and is filled with a clear lymph. Obviously these findings suggest a derivation from the lymphatic system. By logical argument this theory can be strengthened. The neck contains relatively more lymphatic elements than any part of the body; next comes the axilla, and third the groin. Nine tenths of cystic hygromas are found in either the neck or the axilla, the neck easily occupying pride of place.

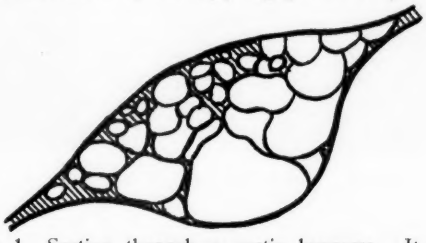

FIG. 1. Section through a cystic hygroma. It is composed of an aggregation of thin-walled cysts, the larger lying nearer the surface.

Up to this point one is on fairly certain ground—the condition is due to an aberration of the lymphatic system. Whether the aberration is of the nature of a retention cyst or a benign neoplasm is speculative. The majority of observers incline to the former view, for the following reasons:

About the sixth week of embryonic life the primitive lymph sacs develop in mesoblast, the principal pair being situated in the neck between the jugular and subclavian veins (fig. 2); these correspond to the lymphatic hearts of amphibians. Failure of an important tributary of the primitive lymphatic system to link up with other lymphatic vessels or with the venous system would account for the appearance of these swellings.

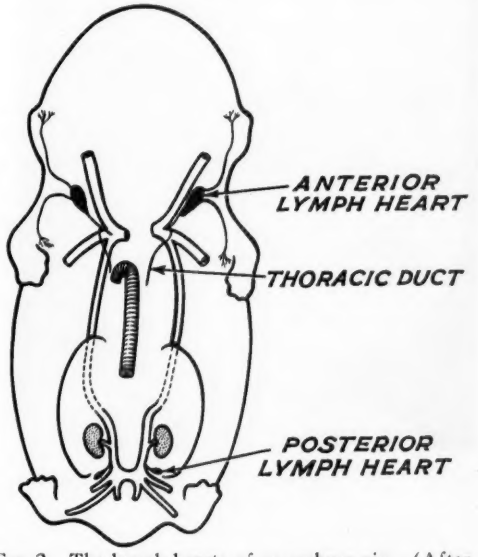

FIG. 2. The lymph hearts of an embryo pig. (After Sabin, F.R.: The Origin and Development of the Lymphatic System.)

CLINICAL FEATURES

Cystic hygromas usually appear during early infancy (fig. 3). Occasionally they are present at birth. I have seen

a case in which both sides of the neck and both axillae were involved, so great a swelling being produced that labor

FIG. 3. Cystic hygroma in infancy.

was obstructed. A. E. Ellis cited an example of an infant born with an enormous hygroma. The child survived

FIG. 4. Cystic hygroma which remained stationary in size for over a year.

until the third day, its death being hastened by increasing dyspnea. Such examples are unusual. Typically a cystic hygroma occupies the lower third of the neck, and as it enlarges it passes upward toward the ear (fig. 4). It is situated immediately lateral to the carotid sheath and anterior to the cervical nerve roots, and often it extends down behind the clavicle, to lie on the dome of the pleura. As has been

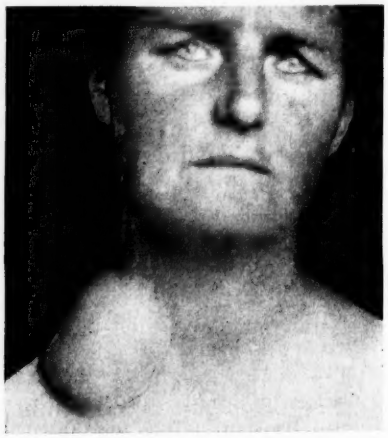

FIG. 5. Solitary lymph cyst.

emphasized already, most hygromas are essentially multiocular. In a few cases the swelling enlarges visibly when the child cries, and it can be partially emptied by steady pressure—signs which indicate that the interior is not grossly subdivided into loculi.

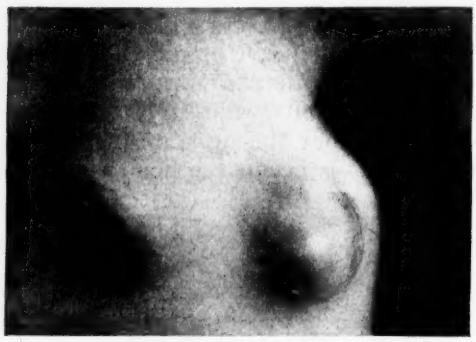

FIG. 6. Cystic hygroma of the axilla.

The clinical behavior of a cystic hygroma is uncertain, so much so that it is impossible to prognosticate what will happen in a given case. Sometimes growth is rapid, as recorded by Prof. John Fraser, after which the cyst may burst subcutaneously and disappear

within forty-eight hours. Several observers have noted that these cysts become the seat of recurrent inflammation, which often resolves without special treatment. In many cases the cyst continues to grow up to a certain point, and then appears to remain stationary. J. B. Murphy has been quoted as saying that cystic hygromas occasionally take on malignant characteristics, but if this is true it is exceptional. I have seen but 3 cystic hygromas in adults. Two were in the supraclavicular triangle (fig. 5), and one was in the axilla (fig. 6). In each of these cases the hygroma was mainly unilocular and could be emptied by pressure.

TREATMENT

Statistics show that the mortality among infants having a cystic hygroma is considerable. In a number of instances the fatal issue appears to have been aggravated by attempts at treatment. Of treatments not to be recommended, radium heads the list. Seven of twelve patients died of acute infection following insertion of radium needles into a hygroma. Aspiration serves no purpose, nor can injection be advised. True, Harrower had a successful issue following two injections of sodium morrhuate, but the swelling must have been one of the rare varieties of unilocular, or mainly unilocular, cysts. While I have had no personal experience of injection treatment in these cases, there is an exact parallel in certain testicular swellings. A thin-walled hydrocele of the tunica vaginalis often responds well to treatment by injection, but, as might be expected, in the case of multilocular cystic disease of the epididymis injection is painful and useless.

In early life inactivity is the best course. If the mass is rapidly increasing in size, spontaneous rupture can be awaited with some confidence. In cases in which the condition seems to be at a standstill, x-rays may be tried, but there is little evidence that any benefit accrues. When the child has reached the age of 2 years and is strong and healthy, clean, sharp dissection of the whole mass gives excellent results. In older children and adults, careful surgical removal of a cystic hygroma, whether in the neck or the axilla, is uniformly satisfactory.

SUMMARY

Cystic hygroma is the only brilliantly translucent swelling of the neck. It arises from failure of an important tributary of the primitive lymphatic system to link up with other lymphatic vessels or with the venous system. It usually appears early in life and typically occupies the lower third of the neck, extending upward as it enlarges. It is also found in the axilla. Most hygromas are multilocular. The clinical behavior is uncertain; in some cases spontaneous rupture occurs.

The mortality among infants is great and is often due to treatment. Radium is not to be recommended; aspiration is purposeless, and the benefits of injection and x-rays are questionable. In persons 2 years of age or older, surgical removal gives satisfactory results.

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RÉSUMÉ

L'Hygroma Cystique

L'hygroma cystique est le seul gonflement du cou qui soit translucide. Il résulte du manque d'abouchement d'une branche importante du système lympha-

tique avec d'autres vaisseaux lymphatiques ou avec le système veineux. Généralement il se manifeste en bas âge et siège au tiers inférieur du cou, et en grossissant envahit les parties moyennes et superieures du cou. On le rencontre aussi dans l'aisselle. La plupart des hygromas sont multiloculaires. Dans certains cas la rupture spontanée survient. La mortalité chez les enfants est grande; souvent elle résulte du traitement. Le radium n'est pas recommandable; l'aspiration ne donne pas de résultats permanents. Les injections et les rayons X donnent des résultats douteux. Chez les malades au-dessus de deux ans l'ablation chirurgicale donne des résultats satisfaisants.

ZUSAMMENFASSUNG

Zystisches Hygrom

Zystisches Hygrom ist die einzige klar-lichtdurchlässige Schwellung am Hals. Es entsteht dadurch, dass ein bedeutender Anteil des primitiven Lymphsystems nicht zur Verbindung mit den anderen Lymphgefässen oder mit dem Venensystem kommt. Es erscheint gewöhnlich sehr zeitig und findet nich typisch am unteren Halsdritte; wenn es sich vergrössert, zeigt es eine Tendenz zur Entwicklung nach aufwärts. Auch in der Achselhöhle ist es anzutreffen. Die Mehrzahl der Hygrome ist multilokulär. Ihr klinisches Verhalten ist unbestimmt; in einzelnen Fällen erfolg Spontanruptur.

Die infantile Mortalität ist gross und häufig eine Folge der Behandlung. Radium ist nicht zu empfehlen. Punktion ist zwecklos und die Vorteile einer Injektionsbehandlung oder von Röntgenbestrahlung sind zweifelhaft. In Kindern von 2 Jahren ab bringt die chirurgische Entfernung befriedigende Resultate.

SUMARIO

Higroma cístico

Higroma cístico es la única inflamación brillante y translucente del cuello. Este se presenta cuando un tributario del sistema linfático primitivo no se conecta con otros vasos linfáticos ó con el sistema venoso. Generalmente aparece temprano en la vida y ocupa tipicamente el tercio mas bajo del cuello, extendiendose hácia arriba al crecer. Puede ser encontrado tambien en la axila. La mayoria de los higromas son multiloculares. La manera que actuan clinicamente es indeterminada; en muchos casos rupturas espontáneas occuren.

La mortalidád entre los niños es grande y amenudo debida al tratamiento. El radio no se debe de recomendar; la aspiración no es indicada, y los beneficios de inyecciones y rayos-x son dudosos. En personas de dos anos de edad ó majores extirpación quirúrgica da resultados satisfactorios.

RIASSUNTO

Igroma cistico

L'igroma cistico è l'unica tumefazione del collo, che è brillantemente translucente. Si sviluppa della mancata anastomosi di un tronco limfatico primitivo con la rete limfatica o con il sistema venoso. Si manifesta nella prima infanzia e tipicamente occupa il terzo inferiore del collo, estendendosi in alto con l'aumento di volume. Si riscontra qualche volta nella regione ascellare. In maggioranza, questi igromi cistici sono multiloculari. Il corso clinico è incerto; in alcuni casi avviene la rottura spontanea.

La mortalità nell'infanzia è alta, e spesso dovuta al trattamento. Il radio non è consigliabile, l'aspirazione non è indicata e dubbi sono i benefici di iniezioni o della Roentgenterapia. In pazienti da due anni in su l'estirpazione chirurgica da risultati soddisfacenti.

PROSTATIC HYPERTROPHY

PATHOLOGIC BASIS FOR TREATMENT*

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PHILADELPHIA

BENIGN prostatic hypertrophy is entirely harmless except as it causes urinary obstruction. Its treatment is therefore treatment of the urinary obstruction. The obstruction is a mechanical affair, due to encroachment on the urethral lumen by masses of hypertrophic tissue. Removal of this tissue constitutes a radically curative procedure. In the past it has been believed that surgical removal was the only effective method. It is indeed a very effective method, thanks to the fact that the enlargement develops in the most central portion of the prostate. After the hypertrophic masses have been removed, the remaining peripheral portions of the prostate are able to shrink down and may become again a practically normal prostate gland. If the removal of the hypertrophied tissue is complete, the procedure does two important things: first, it completely relieves the urinary obstruction, and, second, it practically eliminates the chance of recurrence.

Of late years prostatectomy, which is the not quite correct name for the manual enucleation of the hypertrophied portions of the prostate, has been challenged by two other methods. The first is the so-called transurethral resection, in which the hypertrophied masses are removed piecemeal through a urethral instrument; the second contemplates the shrinkage and atrophy of the hypertrophied masses as the result of the giving of some biologic product designed to reverse the process of hypertrophy which has brought about the disease.

TRANSURETHRAL RESECTION

I shall discuss first transurethral resection. All the instruments used in this procedure necessarily suffer from the same limitation. The urethra is fixed at the point where it passes through the urogenital diaphragm or triangular ligament, and for this reason the instrument can move only in a restricted zone, and can remove tissue only from a region roughly the shape of an inverted cone the apex of which is at or near the verumontanum. In some cases of prostatic enlargement, practically all the tissue to be removed lies within this cone, as diagrammatically illustrated in figure 1*A*, and resection in such a case is entirely satisfactory.

In a prostate no greater in size, as shown in figure 1*B*, the arrangement of the hypertrophied tissue may be quite different, so that much of it falls outside the cone-shaped area. This is true if the growth is extravesical and extraurethral, so that it bulges laterally and into the rectum. If the prostate is very large, the situation may be as represented diagrammatically in figure 1*C* and *D*. The line *S* represents the safe cutting zone, while the line *D* shows how one may run into danger if one extends the cutting too far in an effort to remove more tissue. The arrow indicates the angle between the prostate and bladder, where it is easiest to cut through the capsule into the periprostatic space.

With these diagrams in mind, let us look at some drawings of actual pros-

* Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct. 14, 1938.

tatic specimens to see how infinite is the variety in shape and size.

Figure 2*A*, from Randall's book on the pathology of the enlarged prostate, shows what he called posterior commissural hypertrophy. This mass has a pearlike shape which should lend itself readily to resection. Figure 2*B*, however, from the same source, shows a marked extravesical enlargement which would be difficult to remove completely by that method.

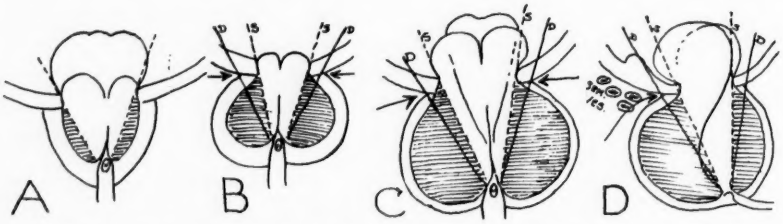

FIG. 1. *A*, diagram of a moderate-sized prostatic enlargement, mostly intravesical, and suitable for resection. The dotted lines show the "cutting cone." *B*, diagram of a prostatic enlargement about the same size as that in *A*, but mostly extravesical. Note how much falls outside the cutting cone. *S* shows a safe cutting zone; if cutting is continued to the danger line *D*, extravasation results. *C*, diagram of a very large prostatic enlargement. Note that nearly two thirds of the hypertrophied tissue falls outside the cutting cone. *D*, diagram of the same prostate as in *C*, in sagittal section. Note the large projection in the direction of the rectum and the danger point in the region of the seminal vesicles.

Tandler and Zuckerkandl, in their excellent book on the pathology of the enlarged prostate, presented a number of sagittal sections which are most instructive. Figure 3*A*, an exterior view of the prostate and bladder, shows again the angle of danger between these, as indicated by the arrow. Figure 3*B* shows a small prostate, largely intravesical. The enlargement could be removed by resection, but care and skill would be needed to prevent an extravasation at the point indicated by the arrow. In figure 3*C*, much of the enlargement falls outside the cutting cone, and the arrow points again to the danger spot. Figure 3*D* demonstrates how, even in a large prostate, most of the hypertrophic tissue may lie within the cutting cone. In figure 3*E* the condition is somewhat similar. In this specimen the hypertrophied portion has been removed after fixation, showing what a cavity it excavates in the prostate. In figure 3*F* the posterior or median part of the enlargement falls easily in the cutting cone; anteriorly there is a good-sized mass, which might be called anterior commissural hypertrophy, which would be hard to reach with the resector. Extravasation could also be caused in this region. In the gland shown in figure 3*G*, the greatest difficulties would again lie anteriorly, although complete removal posteriorly would bring one very near to the seminal vesicles. Figure 3*H* shows an extremely large gland. The difficulty of complete removal here is obvious. Figure 4 shows a carcinomatous prostate taken from Wallace's study of prostatic enlargement. The manner of growth of carcinoma lends itself more readily to a simple tunnelling procedure. Figure 5 shows a hypertrophic mass removed by prostatectomy, which

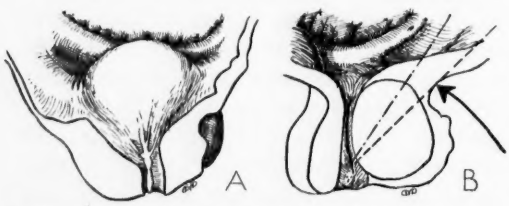

FIG. 2. *A*, posterior commissural prostatic hypertrophy. *B*, wholly extravesical prostatic hypertrophy. The safe cutting line leaves much tissue behind; the arrow points to the region where extravasation is to be feared. (Redrawn from Randall.)

weighed 155 Gm. after 44 Gm. had been cut away from it by resection. Large size alone of the hypertrophied mass may be a serious objection to resection. In the masses of smaller size, it is the conformation of the growth which is most important. This must be studied by observation through all types of cystoscopic lenses, particularly the for-oblique and the retrograde, and by the most thorough palpation, with and without instruments in the urethra. Unless one wishes to perform resection indiscriminately on all enlarged pros-

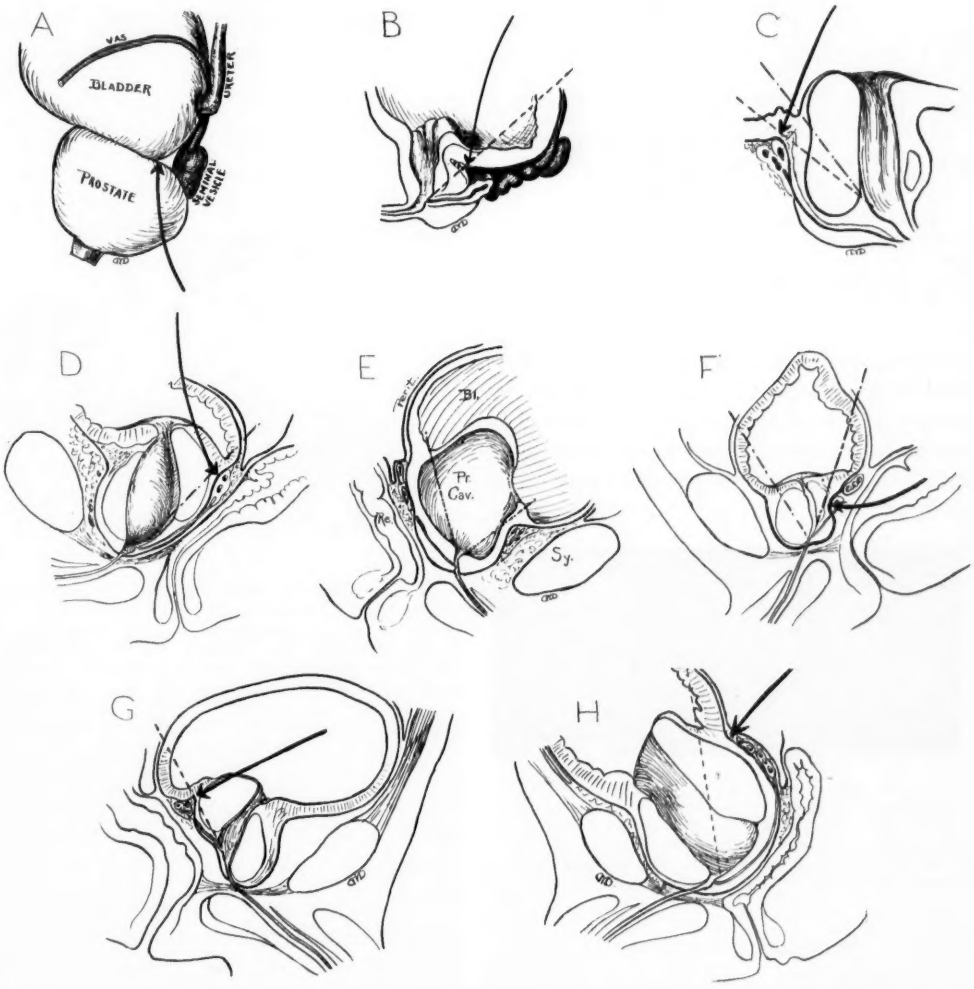

FIG. 3. *A*, exterior view of enlarged prostate, bladder, etc. The arrow points to the danger zone. *B*, small prostatic enlargement. *C*, large extravesical prostatic enlargement, which has also greatly dilated the internal sphincter. Much tissue lies outside the safe cutting zone. *D*, large prostatic enlargement. The shape here is such that most of the tissue lies within the safe cutting cone. *E*, prostate similar to that in *D*. The hypertrophied mass has been removed post mortem, showing the cavity left behind. *F*, moderate-sized prostatic enlargement. The anterior portions are comparatively inaccessible to the resector. *G*, fairly large prostatic enlargement. The arrow points to the danger region near the seminal vesicles. *H*, extremely large prostatic enlargement. Note that the prostate has grown up in front of the seminal vesicles, so that they lie posterior to it instead of above it. Note how far outside the cutting cone much of the tissue lies. (Redrawn from Tandler and Zuckerkandl.)

tates, it is better to attempt to select, according to definite pathologic principles, the ones most likely to permit

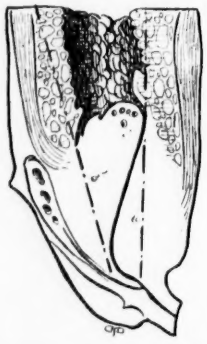

FIG. 4. Carcinomatous enlargement of the prostate. Carcinoma uncomplicated by benign hypertrophy lends itself well to resection, having less tendency to bulge extravesically. (Redrawn from Wallace.)

complete or almost complete removal of the hypertrophied tissue, and treat the others by prostatectomy. If removal is incomplete, the clinical result is apt to be poor, and the chance of recurrence is increased.

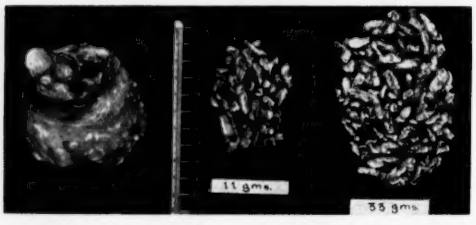

FIG. 5. Photograph of a hypertrophied mass, weighing 155 Gm., removed by suprapubic prostatectomy. At the left is shown 44 Gm. of tissue removed by resection from the same prostate a few months previously. The immediate clinical result of resection was good.

HORMONAL TREATMENT

In regard to the proposal to shrink the enlarged mass by hormonal treatment, I do not wish to discuss the underlying theory at great length. Most of this theory has been built on observations of hypertrophies and atrophies experimentally produced in the genitalia of animals. These hypertrophies involve all parts of a number of organs; e. g., in the rat the penis, the prostate, the coagulating gland, the seminal vesicles and the epididymis. In the disease in man, only the central portion of the prostate hypertrophies, the rest of the genitalia remaining unchanged or undergoing some atrophy. There is, therefore, much doubt that the two conditions are analogous.

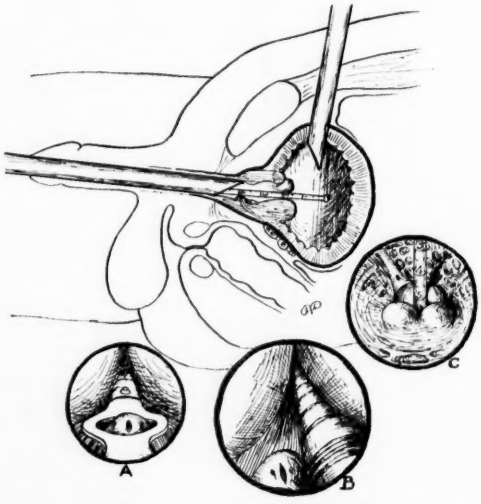

FIG. 6. Diagram illustrating Davis' method of measuring accurately the size of the enlarged prostate. Two panendoscopes are used, one inserted through the urethra, the other through the suprapubic fistula, and a calibrated sound is introduced through the former into the bladder. *A*, panendoscopic view showing a special sound with a fenestra to go over the verumontanum. *B*, view showing how an ordinary graduated urethral catheter can be used, a certain graduation being placed opposite the verumontanum. *C*, view through the upper panendoscope, showing how the length of the prostate may be read off.

At any rate, it is a serious error to judge the effects of hormonal treatment by changes in the symptoms. The symptoms of prostatic hypertrophy are extremely variable. The hypertrophied masses undergo constant changes in size, due to variations in the amount of secretion in the ducts and acini, and particularly to the degree of vascular congestion and edema present. A reduction in congestion may bring about

a truly dramatic improvement in symptoms, but this is very different from a real regression in the hypertrophy of a sort which might lead to ultimate complete cure.

I myself have no evidence to present for or against the hormonal treatment. I do insist that claims made for it should be based on sound pathologic observations. To aid in this, I suggest a method of study which would meet this requirement.

MEASUREMENT OF PROSTATE

The only sure and permanent way to abolish congestion in the enlarged prostate is to establish suprapubic drainage, and this must be done before beginning measurements. A month later, the gland having become quiescent, its length from the verumontanum to the tip of the median lobe should be measured by inserting, under vision with a panendoscope, a measuring rod which would pass well into the bladder. The first calibration is placed and held exactly opposite the verumontanum, and the point at which it emerges from the prostatic urethra can be observed through a second panendoscope inserted through the suprapubic fistula. This is shown in figure 6. This would give an absolutely accurate and objective measurement of the length of the prostate.

Then, and only then, should the hormonal treatment be begun. If, after hormonal treatment, there could be observed a definite diminution of the length of the prostate, great enough to rule out experimental error, there could no longer be any doubt that actual regression had been produced. If no such diminution occurred, it would perhaps save one from further pursuit of a will o' the wisp.

SUMMARY

In addition to prostatectomy, two other methods of treating prostatic hypertrophy are discussed: transurethral resection and hormonal treatment. The applicability of transurethral resection depends on the region, size and shape of the hypertrophied tissue. The author describes an objective method for the exact determination of any regression in the size of the enlarged prostate.

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RÉSUMÉ

Traitement de l'hypertrophie de la prostate

L'auteur décrit en plus de la prostatectomie deux autres méthodes qui sont employées dans le traitement de l'hypertrophie de la prostate: la résection transuréthrale et le traitement hormonal. La resection trans-uréthrale est determinée par le siège, le volume et la forme du tissu hypertrophié. Le drainage suprapubique peut, d'aprês l'auteur, décongestionner la prostate après l'emploi de la thérapie hormonale.

ZUSAMMENFASSUNG

Zur Behandlung der Prostatahypertrophie

Neben der Prostatektomie sind zwei andere Behandlungsmethoden der Prostatahypertrophie beschrieben: die transurethrale Resektion und die hormonale Behandlung. Die Resektionsmethode hängt von Lage, Grösse und Form der vergrösserten Gewebe ab. Der Autor glaubt, dass suprapubic Drainierung dazu dienen kann, die Stauungserscheinungen in der vergrösserten Prostata unter gleichzeitiger hormonaler Behandlung zu beseitigen.

SUMARIO

Tratamiento de la hipertrofia prostática

Además de la prostatectomía, otros dos métodos de tratamiente de la hipertrofia prostática son discutidos: Resección transuretral y tratamiento hormónico. La aplicación del método de resección transuretral depende de la región, tamaño y forma del tejído hipertrofiado. El autor describe un método objetive para la determinación exacta de alguna recurrencía en el tamaño de la prostata hipertrofiada.

RIASSUNTO

Terapia dell'ipertrofia prostatica

Oltre alla prostatectomia, due altri metodi di terapia dell'ipertrofia prostatica sono discussi: la resezione transuretrale e la terapia ormonale. L'applicabilità della resezione transuretrale dipende dalla sede, volume e forma del tessuto ipertrofico. L'autore descrive un metodo obiettivo per la determinazione esatta di qualsiasi diminuzione di volume della prostata ipertrofica.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Interesting Motion Pictures

At the combined International Assembly exhibit of the Anglo-French Drug Company and E. Fougera & Company, Inc. (Booths 39 to 45 and 46 and 47), motion pictures prepared in collaboration with outstanding surgeons will be shown, depicting the following: radical breast amputation, subtotal thyroidectomy, cholecystectomy, incarcerated femoral hernia, resection of splenic flexure of colon for carcinoma in one stage, uterine prolapse, retroversion of uterus, massive carcinoma of breast, massive incarcerated umbilical hernia (above films by Dr. Harry Koster), technic of spinal anethesia (Dr. Benjamin I. Golden), uterosalpingography (Dr. Julius Jarcho), sterilization by means of cautery (Dr. Mortimer N. Hyams), upper respiratory tract (sound pictures in four reels; Dr. James S. Edlin, Dr. S. A. Thompson, Dr. Raphael Schillinger, Dr. A. Q. Penta). Many original technical steps are shown, and their exposition will be of benefit to all those viewing this unique exhibit. All surgeons attending the meeting are cordially invited.

Sutures for Every Purpose

Davis & Geck, Inc., will display in Booths 33, 34 and 35 of the convention hall their complete line of sterile sutures, which includes a wide variety of interesting products especially designed for various situations in accident and emergency work as well as in general surgery and the specialties. A further feature of the exhibit will be motion pictures in full color showing various operative procedures and demonstrating the technic of many eminent surgeons.

Bard-Parker Display

Among the Bard-Parker products to be exhibited at Booth 10 of the International College of Surgeons convention hall are Rib-Back Blades, Renewable Edge Stainless Steel Scissors, Lahey Lock Forceps, Formaldehyde Germicide and Containers for rust-proof sterilization of surgical instruments, and a Hematological Case for obtaining blood samples at the bedside.

CONGENITAL ATROPHY OF THE ULNA

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MEXICO, D. F.

ANOMALIES in the development of the limbs are, in most cases, simple arrests or deviations of the process of evolution. The limbs appear on the two sides of the trunk about the end of the third week or at the beginning of the fourth, when the intestinal canal is closed and the evolution of the crest very advanced.

The ulna has four centers of ossification, one primary and three secondary or complementary. The primary center appears from the thirty-fifth to the fortieth day before birth and is contemporaneous with the primary center of ossification of the radius, tibia and fibula. From the primary center there develops, independently of the body of the bone, a great part of the two ends, in the lower end the upper half of the cubital head, in the upper end the coronoid process and the two lower thirds of the olecranon. Of the secondary centers, the lower apophysis appears from the sixth to the ninth year; the styloid apophysis and the lower lining of the head form from this. The upper apophysis appears from the fourteenth to the eighteenth year and forms the upper part of the olecranon; this is also a point of the olecranon (Andrieu). A special point has been described for the apex of this apophysis (Sappey).

Ossification begins in the lower end. The ends become joined to the body of the bone from the fifteenth to the twentieth year—the upper at 15 to 16 years and the lower after 18.

The congenital anomalies or malformations of the skeleton of the limbs due to osteogenic disturbances the causes of which are not known occur as the result of the following: 1. Disturbances of evolution of the skeleton (*a*, abortion or ectromelia; *b*, hypertrophy). 2. Disturbances of segmentation (*a*, abnormal fusion of segments; *b*, exaggerated segmentations). 3. Axial deviations. 4. Additional aberrant heteroplastic nuclei; osteogenic exostoses.

In this paper I shall not discuss the rather complex pathogenesis of congenital malformations, which is unknown in the majority of cases. I shall mention only the attempted explanations offered for them by the three well known theories: (1) arrest of embryonic development (Potel), (2) amniotic compressions and (3) malpositions or disturbances in the rotation of limbs (Meckel, Geoffrey Saint-Hilaire, Diffenbach, Jeanneney, etc.).

A limb is schematically composed of (*a*) a rhizomelic proximal segment joined to the body (humerus, femur); (*b*) a median or intermediate segment, consisting of two united bones (radius and ulna, tibia and fibula); (*c*) an acromelic terminal distal segment (hands and fingers, foot and toes).

The ectromelias may be classified as follows: 1. Abortion of all the segments (ectromelia proper, or total ectromelia); this is rarely unilateral. 2. Abortion of the rhizomelic segment or of that and of the intermediate segment (focomelia). 3. Abortion of the acromelic segment (hemimelia); this may be total or partial.

Besides these transverse ectromelias, there are cases of longitudinal ectromelia (fig. 1), in which the abortion affects the intermediate bones (radius ulna, tibia, fibula), the acromelic segment being preserved in its totality or

partially disappearing spontaneously (Raboud and Hovelacque[20a]). This constitutes segmental longitudinal atrophy, which is the result of an osteogenic disturbance in which one of the bones evolves normally while the other aborts or develops incompletely. In the case of the forearm, the subject of this study, the ulna may be lacking (*a*) partially, (*b*) totally, (*c*) totally or partially, affecting the internal portion of

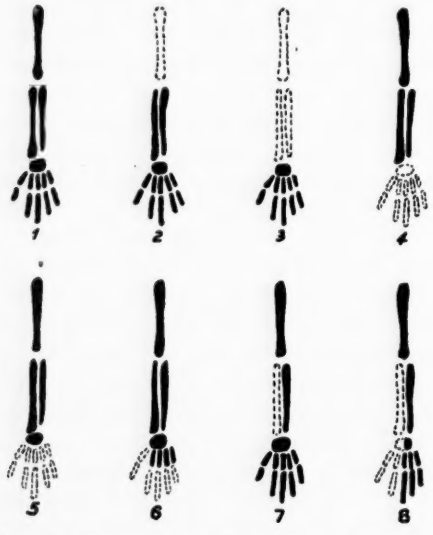

FIG. 1. Schema showing varieties of ectrome'ia (after Potel).

the carpus and of the hand (partial disappearance of the acromelic segment).

Total absence of the ulna was considered exceptional by Maisonnet;[16] Testut[22] and others have stated that it is a rather frequent anomaly. It occurs especially in males, less often, however, than total absence of the radius, and it is sometimes bilateral. It causes the same disturbances as those due to partial absence of the ulna.

When the ulna and a part of the hand are lacking, there is disappearance of the internal portion of the carpus (the pyramidal, the pisiform and the unciform bone) and of the middle, ring and little fingers or of the ring and little fingers.

When the ulna is partially absent or when it is insufficiently developed, one observes the following: 1. Ulnar clubhand, the hand being flexed downward and inward. 2. Inward deviation of the radius; this bone is of normal length, and the normal relations of the proximal radial end are preserved; the deviation occurs inward, outward or in the form of an italic S. 3. Changes in the radial head. This may be flattened on the humeral condyle, surround it and be luxated forward, backward or outward, determining anatomic changes in the condyle. Or it may penetrate the condyle and fuse with it, producing humeroradial ankylosis.

Partial absence of the ulna generally becomes manifest at about the age of 10 or 12 years, a period when functional disturbances due to the unequal development of the two bones become evident. One notes progressive limitation of movements of flexion and extension, pronation and supination. The shortening of the forearm is established; this shortening may progress to 6 or 8 cm. Sometimes functional adaptation occurs.

ANATOMY AND PATHOLOGY

The bones are subject to defects of conformation which may be congenital or accidental. Congenital defects of conformation are frequent in the vertex of the cranium, less frequent in the thoracic and abdominal walls and rare in the limbs. In the bones they consist in lack or excess of development of the affected osseous parts, and often there are associated congenital anomalies of the neighboring viscera.

The defects of conformation following development of bone often are due to a hypertrophy or an accidental atrophy, such as one observes also in several chronic diseases. Defects of conformation in the bones of the limbs are rare. However, the perfectly defined observations of teratologists, anatomists, pathologists and clinicians

have aided, as is the case in all scientific acquisitions, in presenting classifications based on verified facts or on considerations derived from the study of these.

It is accepted that certain defects of conformation are relatively frequent, others less frequent and some rare. On the basis of theoretical study compared with observed facts or on that of deduction as to probable or possible pathogenesis, one can speak of defects which are scientifically acceptable but which may not have been observed, though they may have occurred.

In regard to the ulna, writers have reported that this is sometimes absent, and it has been stated that absence of this bone is a rather frequent anomaly. However, in contrast to the relative frequency of total absence of the bone, it has been reported that congenital atrophy of the ulna is rare. I have compiled from numerous works on anatomy and surgical pathology and from reports in the literature a short bibliography, which is an important source of the facts cited by me. A few of these reports may be reviewed here.

Pircard[19] mentioned a case of almost complete absence of the right ulna. Rosenmüller observed a case in which the olecranon was entirely separated from the ulna, forming a sort of small patella on the posterior surface of the elbow. Deville[8] verified in the cadaver of an elderly man absence of the greater part of the diaphysis of the right ulna, luxation of the upper end of the radius and congenital fractures and luxations.

Demarquay[7] cited a case in which most of the ulna was absent, only the lower epiphysis and all the upper epiphysis remaining, joined to a fragment 5 or 6 cm. long of the length of the diaphysis; between these ends about two-thirds of the ulna was missing, being replaced by a large fibrous band, serving as insertion to the interosseous ligament and all the muscles which are normally attached on this part of the bone. Velpeau[24] cited a case similar to the preceding, probably the same. Blandin[4] observed an ulna which did not reach to the articulation of the elbow.

Maisonnet[16] in his contribution on the surgical pathology of the limbs furnished no bibliography but reproduced some illustrations of Testut and other authors. He discussed from a theoretical point of view partial absence and underdevelopment of the ulna, stating that often the bone conserves its general form but is much shorter than the radius, and that in some cases only the lowermost portion may be missing, in which event the ulna is joined to the radius by a very narrow osseous ligament or by true bony fusion. Testut[22] mentioned that congenital radio-ulnar fusion has been observed rather frequently, but he reported no case of associated ulnar atrophy.

In regard to the nosologic entity of atrophy of the lower portion of the ulna, Maisonnet[16] undoubtedly discussed this subject theoretically, in order to make complete the developmental plan of his work on surgical pathology already referred to, as this work contains no bibliography, no references and no other information as to sources (I have already stated that one can speak of malformations scientifically acceptable but which possibly have never been observed).

In the case of congenital atrophy of the ulna which I report here, the bone did not reach to the articulation of the wrist (articulation of the hand, or radiocarpal articulation). This observation is diametrically opposed to that of Blandin (1837).[4] In view of what has already been said, until proof to the contrary is published one may classify these two original observations as follows: (1) congenital atrophy of the proximal portion of the ulna (Blandin, 1837) and (2) congenital atrophy of the distal portion of the ulna (Manzanilla, 1938).

REPORT OF CASE

I. M., an unmarried girl aged 16, gave a history which suggested hereditary syphilis, but there was nothing significant in the immediate family history. She complained of functional weakness of the right arm, which she had observed since the age of 9 years and which had grown progressively worse.

Physical examination revealed facial assymetry, the left side of the face being less developed than the right, affecting the vault of the palate. The tongue had slight furrows. There was hypertrophy of the thyroid, which was not important, the condition being a colloid, nontoxic goiter (Hertzler), a nontoxic adenoma (Plummer). The mental condition was normal.

The right upper extremity was shortened 3 cm. in its total length, 2 cm. of this shortening applying to the forearm, and 1 cm. to the hand, which in addition was 0.5 cm. narrower than the left hand. Orientation of the axis of the right forearm in relation to that of the left was slightly downward and inward, and that of the right hand in relation to the right arm showed a corresponding deviation (ulnar clubhand). The circumference of the middle portion of the third part of the left forearm was 0.5 cm. greater than the corresponding measurement on the right. Flexion and extension were normal as regards the articula- of the elbow, but limited as regards that of the wrist (articulation of the hand, or radio-ulnar articulation).

Serum reactions were negative for syphilis.

During one year this patient received, in her home, intensive treatment with calcium, supplemented with epinephrine.

ROENTGENOGRAPHIC FINDINGS

Figure 2*A* illustrates the change of form and structure in the two bones of the forearm, showing absence of carpal apposition of the lower end of the ulna. This bone presents a marked difference in diameter in the area of union of the middle and upper thirds as compared with that of the lower third. One sees faintly outlined in the free end the styloid process or apophysis, which appears separated from the rest of the bone by a joining cartilage. In addition, the compact internal blade of the ulna arouses curiosity, being greatly thinned in that portion which corresponds to the greatest diameter of the bone, presenting in this area two kinds of cavities, especially a lower one close to the interosseous space. These cavities and a link of tissue of compact appearance, which traverses the ulna obliquely, give the impression of bone cysts. However, if one takes into consideration the other notable changes in the skeleton, one can state that these are not bone cysts or centers of changes of the medullary tissues of the bone, not very rare in cases of bony atrophy. On the other hand, the skeleton presents no alteration in the longitudinal dimensions in cases of fibrous cystic osteitis, Recklinghausen's disease.

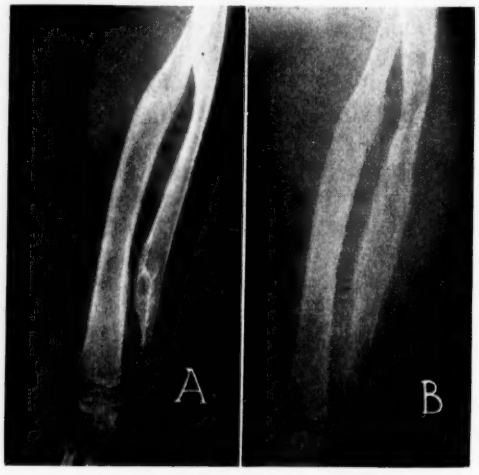

FIG. 2. *A*, roentgenogram showing changes of form and structure in the two bones of the forearm in the author's case. *B*, appearance of the same bones after intensive treatment for one year with calcium, supplemented with epinephrine.

One can say that the ulna presented changes in its distal end which made it permissible to classify as porosic hyperostosis the difference in density of the lower end just mentioned, which can be attributed to monotopic centers in the metaphysis.

The radius shows a double inflection in the form of an italic S, but in addition it must be taken into account that the diameter of the upper portion is less

than that of the middle and lower thirds. The axis of the hand is slightly deviated toward the ulna (ulnar clubhand).

It is evident that this is a case of congenital atrophy of the distal portion of the ulna, rare among the anomalies due to lack of development of the bones of the forearm, according to several authors; one can neither prove nor disprove roentgenologically the possibility that this disturbance or alteration in the ulnar development is of syphilitic, dysendocrinic, etc., origin.

Though the roentgenogram shown in figure *2B* is not rich in details of bone structure, it serves sufficiently to permit one to evaluate the disappearance of the cavities of the lower end of the ulna, a change verified after the intensive treatment with calcium, supplemented with epinephrine, which was carried out for a year. The calcium therapy, as has already been stated, has not influenced possible longitudinal growth of the bone.

THERAPY

The intensive treatment with calcium, supplemented with epinephrine, has succeeded in modifying only the zone of rarefaction in the lower third of the ulna (fig. *2A*). Roentgenologically and at first sight, this rarefaction could be erroneously interpreted, its morphologic features and characteristics and the age of the patient being considered, as solitary cyst of the bone, or fibrous cystic osteitis, the most frequent form of fibrous osteodystrophy. However, the evident congenital atrophy of the distal portion of the ulna and the singularity of the fibrous osteodystrophy localized in the bony segment in this case (regional fibrous osteodystrophy), as well as the indisputable effect of the calcium, lead one to reject the interpretation mentioned and make tests of the blood calcium content superfluous. Even though the calcification of the rarefied zone is evident (fig. *2B*), the calcium therapy had no effect whatever on possible longitudinal growth of the bone. Finally, if one considers the therapeutic failure as regards the osseous atrophy, the age of the patient and the well known facts concerning ossification of the distal end of the ulna, medical therapy should be rejected, in my opinion.

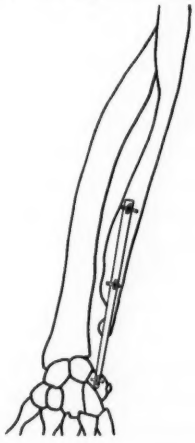

FIG. 3. Drawing showing operative plan of the author.

I am firmly convinced that this case belongs in the surgical category. Unfortunately, the patient and her family have refused radical treatment.

The surgical plan that I had sketched and which I hope to carry out when the patient and her family have become convinced of its necessity is as follows:

1. Making an incision after the manner of Albee, on the dorsal surface of the atrophic ulna, extending this onto the lower third.

2. Making a small incision, a continuation of that of the ulna, on the dorsal surface of the pyramidal bone.

3. Obtaining a longitudinal bone fragment, after the manner of Albee, from the lateral or external surface of the tibia.

4. Fixation of the tibial fragment into the incision of the ulna and the pyramidal bone (fig. 3).

The creation of this graft would modify the deviation of the hand and

would more or less correct the ulnar clubhand. I do not doubt that the amplitude of movements would improve sufficiently to bring about a certain degree of functional adaptation.

I do not consider concomitant osteotomy of the radius necessary; it is logical that the shortening already mentioned would remain.

As an auxiliary measure one could use calcium therapy, giving such calcium fixatives as deemed desirable (epinephrine, parathyroid, vitamin D, ultraviolet radiation).

SUMMARY

A case of congenital atrophy of the distal portion of the ulna is reported; up to the time of writing, this is the first known observation of this condition.

Blandin reported in 1837 a case of congenital atrophy of the proximal portion of the ulna.

The author reviews the subject of congenital anomalies or malformations of the limbs, due to osteogenic disturbances of unknown cause, and adds some organogenic, anatomic and pathologic considerations. The clinical features of his case are presented and the operative plan proposed by him is outlined.

I wish to thank the radiologist Dr. Samuel Ruiz Cornejo for his interpretation of the roentgenograms.

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RÉSUMÉ

Atrophie congénitale cubitale distale

On a donné à connaître un cas d'atrophie congénitale cubitale distale; on considère que jusqu'au moment où il soit présenté une preuve documentée du contraire, il s'agit de la première observation de son genre. Blandin fit connaître en 1837 une malformation congénitale de type diamétralement opposé, atrophie congénitale cubitale proximale.

L'auteur consigne des renseignements sur cette classe d'anomalies ou malformations congenitales des membres, dérivées de troubles osteogéniques dont nous ignorons la cause; il y ajoute des considérations organogéniques,

anatomiques et pathologiques sur le sujet. Une relation des faits cliniques sur le cas est présentée et l'on expose le critérium thérapeutique, indiquant également le traitement chirurgical d'accord avec un plan opératoire proposé par l'auteur.

ZUSAMMENFASSUNG

Kongenitale Atrophie des distalen Endes der Ulna

Ein Fall von angeborener Atrophie des distalen Ulna-Anteils wird beschrieben; der Bericht ist die erste bekannte Beobachtung dieser Art von Missbildung bis zum Zeitpunkt der Veröffentlichung. Blandin berichtete in 1837 über einen Fall, der die entgegengesetzte Missbildung aufwies, nämlich Atrophie des proximalen Ulna-Endes. Der Verfasser gibt eine Uebersicht über die Kenntnisse, die über diese Art von angeborenen Missbildungen, die auf osteogenetische Störungen unbekannter Ursache zurückzuführen sind, vorliegen und fügt einige Ueberlegungen von entwicklungsgeschichtlichen, anatomischen und pathologischen Standpunkt hinzu. Das klinische Bild seines Falles sowie der vom Verfasser vorgeschlagene Operationsplan wird ausführlich beschrieben.

SUMARIO

Atrofia congénita cubital distal

Se da conocer un caso de atrofia congénita cubital distal; se considera que mientras no exista documentación probatoria en contrario, se trata de la primera observación de su tipo. Blandin dió a conocer en 1837 una malformación congénita de tipo diametralmente opuesto, atrofia congénita cubital proximal.

El autor consigna datos informativos sobre esta clase de anomalías o malformaciones congénitas de los miembros, derivadas de trastornos osteogénicos cuya causa ignoramos; y hace consideraciones organogénicas, anatómicas y patológicas sobre el particular. Se relatan los hechos clínicos del caso en cuestión y se expone el criterio terapeutico, indicándose el tratamiento quirúrgico, de acuerdo con un plan operatorio propuesto por el autor.

RIASSUNTO

Atrofia congenita della porzione distale dell'ulna

Un caso di questa condizione patologica è riportato. Al presente, queste è la prima osservazione conosciuta di tale tipo di malformazione. Blandin riportò nel 1837 un caso di tipo opposto—atrofia congenita della porzione prossimale dell' ulna. L'autore passa in rivista la patologia di questa classe d'anomalie congenite o malformazioni che sono dovute a disturbi osteogenici di natural conosciuta, a aggiunge considerazioni personali organogeniche, anatomiche e patologiche. Le caratteristiche cliniche di questo caso sono presentate, con la procedura operativa proposta dall' autore.

WORLD'S FAIR DAY
OF THE INTERNATIONAL COLLEGE OF SURGEONS: MAY 25

FOR INFORMATION APPLY TO DR. EDWARD FRANKEL, JR., GENERAL CHAIRMAN OF ASSEMBLY, 217 EAST SEVENTEENTH ST., NEW YORK CITY, OR AT INFORMATION DESK

PHARYNGEAL DIVERTICULUM

ONE STAGE RESECTION*

THOMAS A. SHALLOW, M.D., F.A.C.S., F.I.C.S.
PHILADELPHIA

IN the past the classification of pulsion diverticula existing in the upper alimentary tract has been much disputed. It is the purpose of this paper to prove conclusively, on the basis of my operative experience in 104 cases, that pulsion diverticula are all pharyngeal in origin and eventually require surgical intervention.

No authentic case of pulsion diverticulum arising in the esophagus has come under my observation, nor have I been able to find a report of any in the literature.

All esophageal diverticula are tractional in origin and are due to periesophageal inflammatory disease. This type of diverticulum, except in rare cases, does not require surgical intervention. Pulsion pharyngeal diverticula are relatively common and should be recognized more frequently.

SITE OF ORIGIN

For many years it was almost universally accepted that pharyngeal diverticula arose from Laimer's triangle. This belief persisted until 1908, when Killian wrote his epoch-making article on the anatomy of the esophagus and pharynx. Not satisfied with the dissections done by Luschka and, later, by Laimer, he resolved to study the region of the hypopharynx and the esophageal orifice.

Much of Killian's labor went for naught until Sir Berkeley Moynihan investigated this area in 1927. In an article Moynihan corrected the erroneous belief that pharyngeal diverticula arise from Laimer's triangular area. He pointed out that this area is situated below the lower border of the cricopharyngeus muscle of the pharynx, hence, not in the pharynx.

Killian further demonstrated a possible area for the origin of the pharyngeal diverticula. He showed the presence of a defect below the cricopharyngeus muscle, which he called a slit. This slit is below the cricopharyngeus muscle and above the esophageal fibers. Killian's description is as follows: "The slit that we see on each side between the pars fundi-formis and the circular fibers of the esophagus is a very important area. Here in this slit the recurrent nerve passes through to divide into the anterior and posterior branches." Killian made no mention of this area in relationship to diverticula of the pharynx. It is cited here because of the work recently reported by Moynihan on dissections made by J. K. Jamison. It is due to this original work, done by Killian and confirmed by Moynihan, that I desire to establish in my series of cases the relative frequency of this site for the origin of pharyngeal diverticula.

Killian's studies also demonstrated that the lowermost bundle of the inferior constrictor muscle, which he called the sling bundle of the pars fundiformis, is the chief closing muscle of the esophageal opening. In the state of contraction it presses the opening of the esophagus together and holds it against the cricoid plate, producing a crescent-shaped opening with the concavity forward. In his text and by photograph, he further pointed out the

*Read at the Second Annual Assembly of the United States Chapter of the International College of Surgeons, Philadelphia, Oct. 14, 1938.

influence of the cricopharyngeus muscle in the production of pharyngeal diverticula.

The observation of Jamison, while not original, has crystallized knowledge of the subject. He observed that not only the inferior branch of the recurrent laryngeal nerve but also a branch of the inferior thyroid artery and vein and a bundle of lymphatics passed through this hiatus. This anatomic observation of Killian and Jamison explains the symptom of hoarseness present in nine of my patients. Likewise, it explains the presence of hoarseness which temporarily followed two of my operations. A curious fact concerning the postoperative hoarseness was that it was not apparent immediately after operation but came on gradually after the fifth day. The hoarseness in both cases, fortunately, disappeared.

That this slit is not an uncommon site for the origin of a diverticulum is further emphasized by the frequent presence of a branch of the inferior thyroid artery crossing the fundus of the sac. I have had occasion to ligate this vessel in at least 35 per cent of my cases. I believe that the deformity of the fundus of the sac, as shown by x-ray pictures, is caused by entrance of a branch of the inferior thyroid artery into this slit. If this is so, this supposedly unusual site of origin for diverticula would prove to be a rather common one of pharyngeal diverticula. Indeed, it is my belief that a diverticulum can arise from any portion of the pharynx where it is perforated by a branch of the interior thyroid artery. This belief is fortified by the origin of a diverticulum much higher than the cricopharyngeus muscle. A defect of the oblique fibers in the posterior lateral wall of the inferior constrictor muscle was observed as though it had been punched out with an instrument. The sac was covered with a thick muscular coat—the only diverticulum in this collection which had a complete muscular covering. The x-ray and bronchoscopic studies confirmed this high origin of the sac. The late Dr. Manges reported "a rather large diverticulum originating a little higher than the average, apparently just below the larynx."

Briefly, true pulsion diverticula have been observed by me to originate in one of three areas: 1. They have arisen most frequently from the lateral wall of the pharynx between the cricopharyngeus muscle and the oblique fibers of the inferior constrictor of the pharynx, either on the left or on the right. In four of my patients the pouch originated from the right side of the pharynx. 2. The next most frequent site is the Killian-Jamison area. This is on the posterolateral wall of the pharynx, below the cricopharyngeus muscle and above the circular muscle fibers of the esophagus. Through this weak area the inferior laryngeal nerve, a branch of the inferior thyroid artery and a bundle of lymphatics pass. In this area more than 35 per cent of the pouches arose. 3. The least frequent site of origin has been through the upper portion of the inferior constrictor muscle, a site for another branch of the inferior thyroid artery.

SYMPTOMS

1. *Dysphagia.* This is the most common symptom of diverticulum of the pharynx. It varies from inability to swallow liquids or solids to a relatively small degree of inconvenience in swallowing. In the beginning, when the pouch is small, the individual is able to swallow after the pouch is filled; but as the pouch increases in size it frequently assumes a position between the esophagus and the vertebral column, so that when filled it obstructs the lumen of the esophagus to such a degree as to render swallowing impossible.

2. *Vomiting.* This is a prominent

symptom. Regurgitation of food from such a partially filled sac is an annoying condition. This varies from immediate regurgitation, as soon as the sac is partially filled, to regurgitation a number of hours after eating.

3. *Noisy Deglutition.* Many patients complain of this symptom, which is commonly so annoying as to cause the patient to eat alone. A number of my patients never ate in the presence of others or in public.

4. *Hoarseness.* This is not an uncommon symptom. Nine patients in this series complained chiefly of hoarseness.

5. *Tumor in the Neck.* Occasionally such a tumor may be palpated. This sign was present in five patients of the series. Invariably a gurgling sensation could be detected beneath the fingers when the patient swallowed.

While the symptoms described, when present, are helpful in leading one to suspect the presence of a diverticulum, the diagnosis is invariably made during roentgenologic examination.

PROGNOSIS

The prognosis compares favorably with that of any major operative procedure—it is good in 98 per cent of the cases. The question of mortality in diverticulum of the pharynx has undergone a revision in recent years. Now diverticula of the pharynx are recognized early. The sac does not reach the dimensions that I observed in an earlier series of cases; consequently the patient's physical condition at operation is better than that formerly seen. It was not unusual in the early cases to resort to gastrostomy preceding the operation for diverticulum. It have not done a preliminary gastrostomy on the last seventy-nine patients.

MORTALITY

1. *Mediastinitis.* Much is said by advocates of the two stage operation concerning the high mortality due to mediastinitis which follows the one stage operation. Where this opinion had its origin I do not know, nor have I been able to find any record of a high death rate due to mediastinitis in recent years. It has not been a complication in any of my 104 cases. I believe that mediastinitis should occur no more frequently with the one stage operation than with the two stage operation. Easy access to the sac and its rapid separation from the lateral and posterior wall of the esophagus are possible only when an esophagoscope is in the sac. The esophagoscope is of invaluable aid until the neck of the sac is reached, and during repair.

2. *Secondary Hemorrhage.* This is often stated as a complication of the one stage operation, without foundation. There were no secondary hemorrhages in this series.

3. *Recurrence of the Sac.* This was seen in two patients of this series. Both were in their late sixties and had a poorly developed musculature of the pharynx.

4. *Pulmonary Complications.* These not infrequently precede and follow the operation. Many of these patients have preoperative bronchitis as a result of overflowing of the contents of the pouch into the larynx during sleep. One of the three fatalities in this series was due to diffuse pneumonia.

5. *Renal Complications.* One patient, 67 years of age, died of uremia forty-eight hours after operation.

6. *Cardiac Complications.* One patient died from coronary thrombosis fourteen days following operation.

7. *Temporary Pharyngeal Fistula.* This occurred in five of the early cases. It was obviated in subsequent cases by improvement in technic.

8. *Wound Infection.* This seldom occurs as a complication.

There is no doubt that the two stage operation is the one of choice when the surgeon either discards the aid of the

esophagoscope or when the aid of the esophagoscopist is not available.

I believe the operation of choice is that which at its completion leaves the pharynx and the esophagus in their normal positions, not angulated and not stenosed. This operation should not only remove the redundant sac but repair the defect in the pharyngeal wall. This procedure was first advocated by Jackson, and he, in conjunction with Gaub, reported two cases in 1915. Since then the surgical technic has been entirely modified. The procedure which has been described herein is not Gaub's technic but one which was devised by me.

The principles of this procedure are as follows: (1) The pharynx and esophagus are left in their normal anatomic relationship; (2) the hernia of the pharynx is repaired after the sac is ligated, amputated and transplanted beneath the inferior constrictor muscle of the pharynx.

TECHNIC OF OPERATION

Under rectal ether, intratracheal or avertin anesthesia, the patient is prepared in the usual manner, and an incision is made on the side on which the sac presents and along the anterior border of the sternomastoid muscle, from the level of the hyoid bone to 1 inch (2.54 cm.) above the sternum and passing through the skin, platysma and deep fascia, exposing the anterior belly of the omohyoid muscle. This muscle may be divided transversely or retracted. With this incision the external jugular vein may be exposed, and if so it should be divided and tied. The common carotid artery and the internal jugular vein are then exposed and retracted outward. If the thyroid gland is decidedly enlarged, it is sometimes necessary to ligate and cut the superior thyroid artery. The trachea and the esophagus will be found to be encased in a common sheath, which is to be incised, exposing the esophagus in the posterior part of the wound and the trachea anteriorly. After this incision has been made, the trachea and thyroid are retracted toward the midline.

The esophagoscope is introduced into the diverticulum. The sac is emptied by aspiration, thereby avoiding expressing the contents into the larynx. The interior of the pouch and the lower portion of the pharynx are then painted with an antiseptic solution. The esophagoscope is introduced into the fundus of the diverticulum and the sac transilluminated; then the esophagoscopist rotates the sac into the wound. The sac is grasped with intestinal forceps and drawn upward and outward, and the esophagoscope is withdrawn from the pouch. The sac is then freed to the junction of the diverticulum with the pharynx. Care must be exercised to free all muscle fiber from its neck. The neck of even the largest diverticulum is seldom ½ inch (1.27 cm.) in diameter. A neck larger than this usually means incomplete dissection. The sac is transfixed at its junction with the pharynx with a small intestinal needle carrying no. 1 chromicized catgut in much the same manner as a hernial sac is transfixed. The neck of the sac is severed close to the pharynx. The stump is cauterized with pure phenol. After transfixation, ligation and amputation, the stump is cauterized and transplanted beneath the inferior constrictor muscle of the pharynx. If the pouch originates at Killian's slit, the cricopharyngeus muscle and the upper circular fibers of the esophagus are united. Care must be exercised not to include the inferior laryngeal nerve. During this procedure of muscle repair, the esophagoscope is in the esophagus. This detail is necessary in order to obviate stricture at the esophagopharyngeal junction. If this precaution is followed, none of the patients will require subsequent dilation of the esophagus.

The incision in the neck is closed in layers no drainage being used except that afforded by a small piece of rubber tissue or cell silk placed beneath the deep fascia.

SUMMARY

In a series of 104 patients with pharyngeal diverticulum, all operated on by the one stage method, there were three deaths. One hundred and one patients completely recovered. None of the cases was complicated by mediastinitis. None of the patients required postoperative esophageal dilation.

Use of the esophagoscope prevents angulation, stenosis and atresia of the esophagus. Hoarseness is often a chief complaint. There are three areas of the pharynx from which diverticula may arise.

The one stage operation is the reasonable method of treatment of pulsion diverticula of the pharynx. The results depend on rational surgical procedure and accurate approximation of tissues.

RÉSUMÉ

Le Diverticule Pharyngé: Résection en un Temps

Dans une série de 104 malades opérés en un temps pour diverticule du pharynx, il y eut quatre décès. Il y eut 101 guérisons complètes. Aucun cas ne fut compliqué de médiastinite. Aucun cas ne nécessita la dilatation oesophagienne post-opératoire. L'emploi de l'oesophagoscope prévient l'angulation, la sténose et l'atrésie de l'oesophage. L'enrouement est le symptôme dont se plaignent le plus les malades. Les diverticules du pharynx peuvent débuter dans trois différentes régions. L'opération en un temps est une méthode raisonnable dans le traitement des diverticules du pharynx. Les résultats sont en rapport avec une bonne technique et une approximation exacte des tissus.

ZUSAMMENFASSUNG

Pharynxdivertikel: Einzeitige Resektion

In einer Serie von 104 Patienten mit Pharynxdivertikel, die alle nach dem einzeitigen Verfahren operiert worden waren, waren 3 Todesfälle zu verzeichnen. 101 Patienten wurden völlig wiederhergestellt. In keinem Falle war eine postoperative Erweiterung der Speiseröhre nötig. Die Anwendung des Oesophagoskop vermeidet Knickung, Stenosis und Speiseröhrenverschluss. Oft ist Heiserkeit die hauptsächliche Beschwerde. Der Pharynx hat drei Stellen, an denen sich Divertikel entwickeln mögen.

Die einzeitige Operationsmethode ist die gegebene Behandlung in der Chirurgie des Pulsionsdivertikels des Pharynx. Das Ergebnis hängt von dem zweckmässigen chirurgischen Vorgehen und der genauen Annäherung der Gewebe ab.

SUMARIO

Divertículum de la faringe: Resección en un tiempo

En una serie de 104 enfermos con divertículum de la faringe, todos operados por el método de un tiempo, hubieron tres muertes y ciento un enfermos completamente curados. Ninguno de los casos se complicó con mediastinitis. Ninguno de los enfermos nesecitó dilataciones postoperativas del esófago.

Uso del esofagoscopio previene angulación, estenosis y atrésia del esofago. Ronquera es á menudo la queja principal. Hay tres areas de la faringe por donde diverticulos pueden presentarse. La operación de un tiempo es el método lógico de tratamiento de los divertículos de pulsión de la faringe. Los resultados dependen de procedimientos quirúrgicos racionales y aproximación perfecta de los tejidos.

RIASSUNTO

Diverticulo faringeo

In una serie di 104 pazienti con diverticoli faringei, tutti operati in unica seduta, ci ebbero 3 morti. In nessuno caso vi fu complicazione di mediastinite. In nessuno dei pazienti fu necessario di praticare la dilatazione esofagea. L'uso dell'esofagocopo previene l'angolazione, stenosi ed atresia dell'esofago. L'afonia è spesso l'unico disturbo. Vi sono tre zone nel faringe dove possono prodursi diverticoli. L'operazione in unico tempo è un metodo ragionevole di trattamento. I risultati dipendono da un procedimento razionale ed accurata approssimazione dei tessuti.

New Instruments

AN IMPROVED GASTRIC CLAMP

RICHARD A. LEONARDO, M.D., CH.M., F.I.C.S.
ROCHESTER, N. Y.

THE value of an efficient clamp that crushes and sutures (with metal clips) the stomach is well recognized by many surgeons. When one becomes expert in its use, he may well save twenty to thirty minutes of operative time during gastrectomy. Besides, thorough hemostasis and avoidance of spilling of stomach contents are obviously also of great value. I believe that my instrument,* which is a modification of de Petz' clamp accomplishes these advantages better than any instrument devised, and it goes one step further in that it also severs the stomach after it has been first crushed, then sutured, and the knife cuts the stomach beyond the proximal double row of metal sutures. Obviously, since part of the fundus, together with the antrum and pylorus, is to be removed, a single distal row of metal sutures is sufficient. On the other hand, the double row of metal sutures on that part of the stomach which is going to remain is necessary because a single row is insufficient for perfect hemostasis.

I have used the de Petz clamp on numerous occasions, and practically every time I have noticed a small to moderate amount of bleeding from in between the single row of sutures after the stomach has been cut across. Not only does my modification provide for a double row of sutures, but the double row is inserted similar to bricks in building a wall; viz., the second row overlaps the unsutured portions of the first row. Since the two rows of sutures are close together, there will be no redundance of crushed (later to become necrotic) stomach wall.

I do a posterior (retrocolic, isoperistaltic) anastomosis between the jejunum and the stomach. It is possible to do a typical Billroth II operation, and in that case one may completely bury the metal sutures by two rows of catgut or silk sutures. I resort to a method which, I believe, saves considerable time. This is similar to the technic pursued in the clinic of Professor Verebely at the University of Budapest. The angle where the metal sutures and the greater curvature meet is cut off. I make sure that there remains an opening almost 2 inches (5.08 cm.) long. Before cutting off this corner a rubber-covered clamp is placed so as to prevent bleeding and spilling of stomach contents. The anastomosis is performed at this angle. In fact, I insert a seromuscular catgut continuous suture before cutting off the corner of the stomach. After the corner is removed, a second row completes the procedure anteriorly. A small portion of the jejunum is sutured proximal to the site of anastomosis to the suture line of the stomach all the way across, from the upper corner of the site of anastomosis up to the lesser curvature of the stomach, but only after the metal sutures have been inverted by two rows of catgut or silk sutures. Thus in selecting the site of the jejunum to be used for the anastomosis, one must make sure of sufficient proximal jejunum so that later one can sew it to the sutured end of the stomach, above the site of anastomosis.

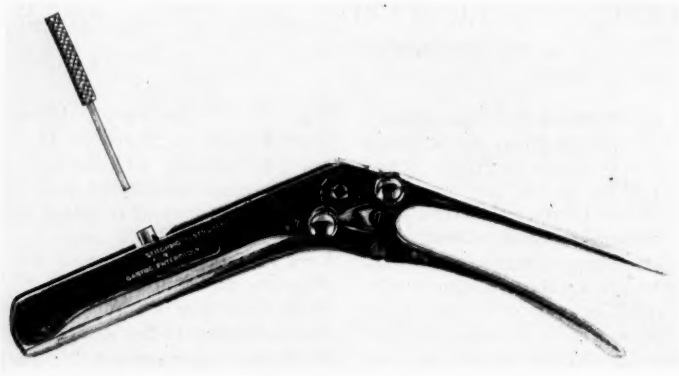
I believe that by resorting to this procedure one shortens the operative time and has a more thorough technic. Surgical shock is apt to be less. The metal sutures will later slough into the gastro-intestinal tract and pass with the stool. They cause no inconvenience to the patient. Of course, the duodenum is to be closed in some manner, and this varies with the technic of the operator.

The knife in my apparatus is removable so that one can do without it if preferred, but it seems that the crushed stomach can better be divided with it.

There are other clamps with metal sutures that are suitable for gastrectomy, but most of these are too large or too bulky. The Hültl machine inserts four rows of metal sutures, but they are so small and so delicate that they do not remain in place, they give no efficient hemostasis, and they are difficult to put in the machine. This renders it hard for the nurse to prepare the machine for operation. Besides, the Hültl machine is very heavy. My apparatus, especially when it is made with light metal, as I recommend, weighs only 1 pound (0.5 kg.). The de Petz clamp also weighs more than my clamp. In the de

* The clamp which I devised is manufactured by S. G. Krebs Co., 351 Second Ave., New York, N. Y.

Petz clamp a long rod emerges from the back of the instrument, as the sutures are being inserted into the stomach. The surgeon must turn a wheel which is attached to the side of the de Petz clamp, and as he turns it counterclockwise the sutures are inserted into the stomach, beginning at the lesser curvature. When all the sutures are placed, the projecting rod is as long as the handles of the clamp, and caution is demanded during the manifold manipulation of this apparatus if the surgeon is to avoid crushing injury to his hand. Besides, the surgeon must also divide the stomach across, and this takes time, in addition to that occasioned by the fact that the sutures are inserted in pairs, one after the other; thus the de Petz clamp works considerably slower than mine. In my clamp there is a removable lever that fits into a special opening in the top of the instrument. I insert this lever into its socket in the upper jaw and depress it its full length (not more than 120 degrees excursion) and then pull the ring outward (toward myself); this pulls on the wire and draws the knife all along its track, thus promptly cutting the stomach from its lesser to its greater curvature. I believe that this instrument has distinct advantages over all similar clamps at present available.



Author's gastric clamp.

182 Versailles Road.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

American Sterilizer Company Products

The American Sterilizer Company, largest manufacturer of sterilizers, operating tables and lights, will have on display in convention Booths 24 and 25 various types of pressure and non-pressure sterilizers with the latest scientific equipment for automatic control and precision performance, the new American head-end control operating table, the American Luminaire line of surgical lights, and the new and popular fully automatic office type sterilizer.

New Heartometer

The new Heartometer, a scientific precision instrument for permanent recording of a perfect pulse count and an accurate systolic and diastolic blood pressure reading, will be shown in Booth 17 of the International Assembly display by the Cameron Heartometer Company. This instrument also produces a graph which records the condition of the nerves, valves and muscle of the heart, showing many heart disorders in their earliest and advanced stages.

CARLOS JUAN FINLAY, PIONEER 1833-1915

V. O. CARDENAS, M.D.
CHICAGO

CARLOS JUAN FINLAY was born in 1833 in Camaguey, Cuba. At the time of his birth it was little suspected that modern times, due to rapid development of science, was to count him among its pioneers, with no precursor to share his unique and original ideas. During his early years he suffered an attack of chorea, but continued his studies. In 1855 he graduated from Jefferson Medical College, Philadelphia, where his most influential teacher was John Kearsley, an early worker on the germ theory of disease. Dr. Finlay visited various countries and increased his knowledge of medicine. He returned to Havana, where he married and settled down to practice medicine in 1865.

His first years of practice brought him not public hospital patients but patients whose sorrow, poverty and needs were near to him. He saw them die during epidemics, of which those of yellow fever were the most threatening. With determination he began his investigations, with two points in mind: a dying patient and a specific cause.

Following is a transcription of the words of Dr. Enrique M. Porto, on an occasion when the memory of Dr. Finlay was honored: "I had not the pleasure to share his work with him, but perhaps I was the first to help him in some of his investigations, about 1880 to 1883. I was the head of a vaccination center, which work I shared with Dr. Antonio Diaz Albertini, Sr. One day Dr. Finlay presented himself to me at the center with a group of test tubes which contained mosquitoes. He had come to ask me to allow him to make direct application with his test tubes over the vaccination pustules of the cattle on exhibition, and that good man, during fifteen or twenty days, applied his test tubes directly over vaccination pustules to see whether he could afterward produce reactions in the persons to whom he applied the tubes. Thus in 1881 Dr. Finlay had a clear picture of ideas which he was putting into practice. I confess that I used to laugh at his experiments, and so did the others at the medical school. Today they do not admit it; they do not like to confess it."

Dr. Carlos Juan Finlay, 1833-1915.

During these early years of his experimentations Dr. Finlay entertained new ideas, many of which he had to eliminate, accepting those that conformed with science. In a very scientific way he considered the possibilities related to the transmission of yellow fever. He thought that climate and the chemical composition of the atmosphere had a close relation with the disease, and therefore studied them in detail, and was convinced that yellow fever was more prevalent during the summer than during the winter months. But in the course of his duties he learned that ships

which had been fumigated and thoroughly inspected, with no suspicious case on board, reported cases of yellow fever weeks later while sailing in colder regions. These facts convinced him that any theory which attributed the origin and propagation of yellow fever to atmospheric, miasmatic or meteorologic conditions must be considered indefensible, and that an intermediary agent which was able to place itself in a ship or region was the transmitting factor of yellow fever.

The mosquito was selected as the intermediary agent not from coincidence but after long observation of patients and facts about the way the disease was contracted. Dr. Finlay studied the varieties of mosquitoes, their geographic distribution, their habits and way of propagation. He found that Culex Cubensis was the variety most common in regions where yellow fever was present and observed that yellow fever did not exist in regions free from mosquitoes of this type. He used this mosquito for his experiments. The female is the one that sucks the blood, the male feeding on vegetable juices. This mosquito was the ideal medium for direct transmission of yellow fever, and that direction he followed in his work.

Dr. Finlay was impressed at the time by the work of Dr. Sternberg, who left a collection of photomicrographs showing that the red cells were discharged unbroken in the hemorrhages of yellow fever, and the fact that the hemorrhages did not leave any apparent lesion of breakage in the blood vessels led him to the conclusion that yellow fever should be sought for in the vascular endothelium. Observing that the disease was transmissible, leaving immunization in the persons who had suffered from it, and noting the phenomenon of regular order comparable with that present in eruptive fevers and those in which the seat of eruption was the vascular endothelium, he was led to state the following conclusion: "Finally, on comparison of the disease to smallpox and to the conditions in vaccination, it occurred to me that in order to inoculate yellow fever it would be necessary to take the inoculable material from within the blood vessels of a yellow fever patient and inject it into the interior of a blood vessel of the person to be inoculated. All of which conditions the mosquito satisfies most admirably through its bite, in a manner which it would be almost impossible for us to imitate."

Three conditions are therefore necessary in order that yellow fever may be propagated: 1. The existence of a yellow fever patient into whose capillaries the mosquito is able to drive its sting, impregnating these with virulent particles, at an appropriate stage of the disease. 2. The life of the mosquito must be spared after biting the patient until it has a chance to bite the person in whom the disease is to be reproduced. 3. Some of the persons whom the mosquito bites thereafter must be susceptible to the disease.

Dr. Finlay was a man of science and wished to tell the world about his discoveries through the most ethical and unshakable medium, so on Aug. 14, 1881, he presented his work before the Academy of Medical, Physical and Natural Science of Havana, and it was recorded in the annals of the Academy year (17:147—169, 1881). This paper and many other facts about Dr. Finlay's work were published by Dr. Emerson Crosby Kelly, of the department of surgery, Albany Medical College, in the Medical Classics (February, 1938).

To my way of thinking, Dr. Emerson Crosby Kelly has opened a discussion about yellow fever which is still far from being settled. He claims that yellow fever is a disease of tropical and subtropical countries, characterized by fever with jaundice, toxemia and albuminuria, and a tendency to hemorrhages, especially from the stomach. In this belief he is backed by the facts in grave cases of yellow fever. On the other hand, Dr. Finlay; Dr. Mathis, of Paris, and Dr. Francisco Dominguez, of Cuba, all have claimed that yellow fever is a very mild disease and have expressed the belief that the forms accepted by Dr. Kelly are the exceptions; and they are backed by the undoubted fact that the immunization of persons of certain tropical regions was due to attacks of yellow fever so mild in many cases that these could be considered ambulatory. Dr. Finlay described all the forms of yellow fever, and in all his inoculations, including the five cases reported with his original work, he avoided producing grave cases.

In the extraordinary session of the Academy of Medical, Physical and Natural Sciences of Havana, on June 20, 1938, in honor of Dr. Francisco Dominguez, the latter said: "We, the Cubans, and especially the doctors, are profoundly obligated to Dr. Emerson Crosby Kelly for the deference he showed toward Dr. Finlay, who had been so many times silenced in the United States, when yellow fever was discussed, and especially for the publication of Dr. Finlay's first work, in which he announced the success of his investigation, presenting the first five cases of inoculation by the mosquito, in three of which the results were positive."

On Jan. 3, 1933, Dr. J. C. Stefanopoulo, in a communication to the Academy of Science of Paris, said that the frustrated form of yellow fever was frequent in the Negro, a form that had been described by Dr. Finlay.

Dr. Francisco Dominguez said to me during my visit to Havana last fall that Dr. Finlay's work was so great and perfect that science was obliged to recognize it and place him in the position he deserves. Let us hope for the truth of science that we may see his name forever connected with yellow fever and the mosquito as an intermediary carrying disease from person to person.

RADIO ADDRESS

PRESENT STATUS OF THE CANCER PROBLEM*

ANDRÉ CROTTI, M.D., F.A.C.S., F.I.C.S.

President of the International College of Surgeons
Head of the Columbus, Ohio, Cancer Clinic

COLUMBUS, OHIO

ONE hundred and fifty thousand people died of cancer during last year in the United States. Since the foundation of the Columbus Cancer Clinic, in 1921, up to January, 1938, 1,372 cancerous patients applied for advice and treatment. Of these, 777 have died. It is generally conceded that at least one third of this frightful mortality could be eliminated if the laity would be fully cognizant of the cancer problem as we see it today. Hence the reason for the educational campaign throughout the nation, undertaken under the auspices of the American Society for Control of Cancer.

First let me state that the total incidence of cancer among nations varies little; what varies most is the organ incidence. Furthermore, distribution of cancer among men and women is about the same.

Cancer is not confined to the human race alone; it is found in animals as well, and its behavior in animals is about the same as in human beings. In both groups cancer appears at the same time, namely, middle age and the late period of life. Finally, animals, like human beings, show a definite susceptibility of certain organs for cancer, but this susceptibility varies with the animal species. For instance, cancer of the breast is common in women, very common in mice, but practically unknown in cows, and cancer of the stomach is very frequent in man but is rare in animals.

Is cancer on the increase? It seems to be.

First let me divide the span of life of a human being into three periods: first, that from birth to 40 years of age; second, that from 40 to 60 years of age, and, third, that from 60 years up. The cancer death rate per hundred thousand population in Ohio has been as follows:

Period	*Per 100,000 Population* 1910	1930
From birth to 40 years....	8.6	11.7
From 40 to 60 (so-called cancer age)	142.5	117.3
After 60	490.6	748.2

The same study applied to the cancer death rate throughout the United States brings out the same results, namely, that in Ohio and in the United States the cancer death rate incidence during the first period of life has increased little, that during the second period of life it has even decreased some, but that during the third period, namely, after 60 years of age, it has increased alarmingly, almost doubled. This shows that the cancer age is not so much the second period of life, namely, from 40 to 60, but after 60.

How are we to explain this alarming increase? There is no question that our better knowledge of the disease, our better diagnostic facilities, etc., may explain that increase, but it does so only partly. Perhaps a good reason for the increase is that preventive medicine, better sanitation, and especially our highly efficient welfare organizations, maternal welfare, etc., save a large number of individuals and prolong their span of life only to carry them to the dreaded cancer age. It is a well known fact that countries where sanitation is the poorest have a much lower cancer incidence than regions where sanitation is highly developed, because people die much younger in the former than in the latter. Consider the average span of life of the Hindu, which is 36 years, as against the average span of life of the American, which is 54 years. The Hindu has not yet had time to reach the cancer age.

Is cancer contagious? It is not. The care of a cancer patient does not entail any possible danger of cancer contamination to the attendants. Several scientists have even tried to inoculate themselves with cancer materials and have always failed. So it can be truly said that cancer is not contagious.

Is cancer hereditary? It is not. Those who contend that it is hereditary are basing their contentions on laboratory observations, which in no way represent conditions observed in the human race. It has been shown by some scientists

* This address, delivered in Philadelphia, Oct. 13, 1938, at 12:00 noon, was broadcast over radio station KYW.

that by resorting to intensive "inbreeding," to intermatings of brothers and sisters in mice, thus producing a high degree of consanguinity, cancer incidence in mice could be brought to a very high degree; hence the conclusion that cancer is hereditary. The laboratory conditions under which cancer was produced in mice do not exist in the human race. Here the matings are purely accidental, governed solely by the affinity of one individual for another. We do not marry our brothers or sisters. We are not thoroughbreds; we are mongrels. If in mice no intensive inbreeding is resorted to and if reproduction is allowed to be again the result of chance matings, the cancer incidence among laboratory animals does not differ from that observed in man; it sinks to its average level. Thus it can be said cancer is not hereditary.

Cancer is not a systemic disease. It begins locally, in one tiny spot, and remains local for awhile, and only later, sometimes much later, does it spread out of its bounds to become systemic. This fact is the crucial point in combating cancer. Indeed, if this is detected in its early beginning, a permanent cure can be expected, if the cancer is removed early and completely. Thus it can be truly said that cancer is not only arrestable but is curable if caught early. In fact, one can say that any form of cancer no larger than a pea can be cured with almost 100 per cent certainty, provided the cancer is removed widely.

However, the chances for complete and permanent cures dwindle rapidly if the size of the cancer is allowed to progress unchecked for too long a period. If, for instance, we take at random 100 patients with cancer of the breast who apply for treatment, in 50 the disease is inoperable and incurable, in 30 it is operable but advanced, and in only 20 is it in the early stages. The 50 patients of the first group are doomed; little or nothing can be done for them. Of the 30 patients in whom the disease is operable, but in only about 15 per cent of whom it is advanced, life can be prolonged for a few years. Of the 20 patients operated on in the early stages about 75 per cent can count upon a cure.

These figures point the way out in a very eloquent manner. Indeed, the only solution for the time being lies in the early recognition and the early adequate treatment of the disease.

It is truly tragic that nature did not see fit to make cancer in its early beginning painful. If it only were! Many thousands of lives would then be spared every hour. Unfortunately, pain appears only when it is too late.

There are, however, "warning signs" which when heeded may lead to an early recognition of the impending danger. Any sore on the skin, especially on the lips, which does not heal, any lump in the breast or elsewhere which persists, any abnormal discharge, bleeding from any of the natural orifices of the body, any persistent "indigestion" and loss of appetite which resists medical treatment, any persisting deviation from the normal in the intestinal function, etc., all these must be regarded as danger signals pointing toward cancer. To be sure, they may not be due to cancer, but it must be determined that the condition is not cancer.

Only by thinking of cancer, only by bending all our efforts toward detecting cancer early and treating it early with surgery, radium and x-rays and also by preventing the appearance of cancer through dealing with the conditions which are known to lead to formation of cancer can we hope to reduce the frightful cancer death rate existing today.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Curvlite Instruments

Curvlite, the original cold-light plastic instrumests, to be on display at convention Booth 49 of the International Assembly, provide directed diagnostic light and will not conduct heat or electricity. Another reason for the tremendous popularity of Curvlite instruments (Curvlite is the world's largest selling cold-light "plastic" instrument) is the fact that they are guaranteed unbreakable. Manufactured by Curvlite Products, Inc., 567 Third Ave., New York.

Medical Equipment on View

Of considerable interest at the convention of the International College of Surgeons will be the exhibit of the Ohio Chemical and Manufacturing Company (Booth 15). They will feature the Heidbrink Kinet-O-Meter, Heidbrink Oxygen Tents, Helium-Oxygen Therapy Apparatus and the new B-L-B Inhalation Apparatus, as well as other equipment and accessories which this company supplies to the medical profession.

RADIO ADDRESS

AIMS AND OBJECTIVES OF THE INTERNATIONAL COLLEGE OF SURGEONS*

MAX THOREK, M.D., F.I.C.S., F.I.C.A.
Professor of Surgery, Cook County Graduate School of Medicine
CHICAGO

SURGERY was once the *bête noir* of medicine. In the minds of the average citizen, "to be operated on" was almost the same as to take with cold deliberation an uncertain potion which was almost sure to be followed by death.

Time and experience have changed all that. Like the circuit rider, who brought to the outlying homes his edifying news of eternal salvation and of faith in an Infinite Power, or the family doctor, who fetched everything from babies to domestic peace, the surgeon has become a family watchword. Even the humblest mind has been taught to recognize that there are times when only skilful surgery brings relief; and because of this teaching, because of this assimilated knowledge, the erstwhile rough path of the surgeon has burgeoned with the fragrant shrubs of faith, confidence, trust and optimism.

From this cognizance of human dependency, to the honest surgeon there has come a new responsibility. This responsibility is the knowledge that he must not fail in any trust reposed within him. And to keep in tune with this responsibility the surgeon finds himself spurred to a deeper effort, and to a stronger endeavor to produce such results of science for suffering humanity that the millenium shall seem to have appeared.

The watchword of stability and success for the United States, all through the decades of storm and circumstance, through war and peace and depression and glean of golden harvest, has been that "In Union there is Strength."

This maxim which has served our country is an unsurpassable slogan for the professions that serve that country and through that country serve the world. It is therefore well for all crafts, arts and sciences to realize that in group study, group performance and group consultation, the highest degree of the greatest good for the greatest number can best be achieved.

From such realization comes the basic reason for the founding of the International College of Surgeons. Humanity and mortality know no boundary within the eye of human beings. A man is a man wherever he exists. He is begotten, and he begets his kind by the same process. Creeds may differ, climates vary and civilization vacillate, but man the fundamental, and man the primitive, whether his skin be black, white, red or yellow, is essentially the same in his bodily structure and his physical ailments. According to the oath of Hippocrates, the medical profession is bound to care for the ailing flesh of mortal man, and the demands on the profession are not affected by degrees of latitude or of longitude. Hence the *common knowledge is the common good.*

And that, if nothing else, stands as the reason for the existence of the International College of Surgeons. As in music and in the plastic arts, there exists beyond dispute a common language of science and of skill. A surgeon may amputate a man's leg or repair his damaged internal organs if he can speak only Scandinavian and his patient knows only Hottentot. But the surgeon must be competent. And so the exchange of ideas and of experiences and of results from laboratory research and operating room experience are essential between nations if the maximum of efficiency and proficiency in the service of mankind is to be achieved. This is done best by a recognized, authenticated group, correlating its activities, its research and its findings with other recognized groups. The economy of time, the salvation of human life and the expertness of technic thus achieved is incalculable.

Since the constituents of the International College of Surgeons are representative men from the United States, England, Switerland, Germany, Czechoslovakia, Rhodesia, Austria, Australia, Belgium, Bulgaria, China, Egypt, France, Spain, Italy, Japan, the Netherlands, Poland, Portugal, Rumania, Russia, Argentina, Bolivia, Uruguay, Colombia, Chile, Syria, Turkey, Venezuela, Cuba, Mexico, Brazil, Peru, Norway, Denmark and Sweden, their common language is the mercy that dwells in the "healing knife."

To the surgeon there is no explanation necessary. To the laity the "healing knife" is best described as the use of the instrument that renders innocuous by removing that which is useless, poisonous and threatening life and which enables the repair of that which is maimed. Next to the "pay envelope," surgery has done more to keep together the modern home than any other modern aid.

It may be the amputation of a limb hopelessly crushed and useless and the retaining of which

* This address, delivered in Philadelphia, Oct. 13, at 8:45 p. m., was broadcast over radio station WIP.

will send deadly poisons through the system that calls for the skill of the surgeon. It may be an affected internal organ or a death-dealing cancer eating away a helpless victim, or the comparatively simple excision of a tonsil or an adenoid, or, perhaps, the involved surgery of the complex nervous system, or the intricate operation by which the race is perpetuated that needs the surgeon's skill.

Any human being who can be saved from physical pain or economic inefficiency is a direct asset to the State, and it is as an economic as well as an humanitarian asset that the surgeon's skill must be regarded. Thousands upon thousands of men, women and children have been lifted from the depths of dependency and despair by the skill of the modern surgeon. The blind have been given sight, the crippled have been helped to walk and the bedridden to rise and to go forth comparatively, if not completely, whole as a result of a trip to the operating room. Maternal mortality has been reduced almost as much by surgical knowledge as by that antisepsis conceived and developed by the immortal Ignatz Philip Semmelweis.

Aside from major correctives such as the straightening of crooked spines, and the removal of diseased tissues or organs or the adjustment and repair of misplaced or abnormal organs, surgery has done much to alleviate human ills of lesser gravity. Everywhere, and every hour, the sincere surgeon with his heart in his work spends countless hours in experiment and in research. Perfection of technic emanates from patient toil. Exchange of discoveries made in these hours of toil is one of the incalculable benefits that arise from group association, and it is because of this that medical and surgical men unite in groups such as the American Medical Association, the American College of Surgeons and the International College of Surgeons. Because there is a standard of ethics set and maintained by each of these bodies, each of which is reliable, recognized and standardized, it is possible for their findings to be accepted and used just as the housewife knows that when she purchases commodities of a reputable brand that she can depend upon that commodity for anticipated results.

The world at large has come to know that health is the most dependable wealth. Gradually the day of the nostrum is dying. Hygiene takes the place of the witch's brews of yesteryear. But hygiene alone cannot replace the mechanized science of surgery. A crooked tree must be made straight by some mechanical device; fungus growths must be cut away from an ailing vine. And so must the scalpel be brought into play when a dire abnormality, misplacement or destructive growth threatens the entire bodily structure.

When *not* to operate is as essential as when to operate.

The invisible line between is sought constantly by the research workers in the realm of surgery. And the wider that realm, the more closely it is interknit by group association, the greater its benefaction for the human race.

A great factor in this group association, it is hoped, will result from the activities of the International College of Surgeons.

The International College of Surgeons is a purely scientific organization incorporated solely for the advancement of the art and science of surgery in all its branches. The chapters of the various countries representing the International College of Surgeons are free to formulate by-laws to suit the needs of their respective countries and yet be governed by a central, unbiased body of eminent surgeons. The Members and Fellows of the American Chapter of the International College of Surgeons are obliged to live up to the code of ethics of the American Medical Association, and members and fellows of chapters of other countries must adhere rigidly to the codes of ethics laid down by their respective countries. The International College of Surgeons stimulates effort by awarding prizes and distinctions for theses and successful contributions to be passed upon by an outstanding committee of surgeons. These awards are open to any surgeon, anywhere in the world, regardless of nationality, creed or race. And it promotes through its International Committees, its assemblies, bulletins and the *Journal*, the dissemination of knowledge of the constructive surgical advances made. It aspires to cooperation, the creation of an inflexible "esprit de corps," and staunchly discourages antagonisms. It is strictly nonsectarian and nonpolitical. Its ideals are based on Pasteur's aphorism: *"La science n'a pas de patrie parce que le savoir est le patrimonie de l'humanité, le flambeau qui éclaire le monde"* and its motto—*Pro Omni Humanitate*. It is decidedly against arbitrary restriction of merit, is free from prejudices and aspires to the ideal of *Palman qui feruit mereat*.

It is free from the taint of personal gain. Not a single dollar has been paid to any one of the organization for services. The organization work is carried on by voluntary contributions. The International College of Surgeons recognizes the surgeon and his accomplishments and is not influenced by his financial, political or other irrelevant status.

Surgical and hospital practice in the last twenty-five years have achieved an outstanding eminence. One of the most effective stimuli in hospital standardization in the United States and of surgical betterment generally was inaugurated by the American College of Surgeons.

It is largely due to the endeavors of this body that the United States has triumphed as it has in such approximate perfection of hospital and surgical standardization—service that is an outstanding and virile demonstration of the exemplary progress made by surgery and by hospitals in their ministrations to humanity.

Thus it is in a spirit of cooperation with all surgical organizations that the International College of Surgeons sets forth upon its way, for the relief of suffering and the benefit of all mankind.

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SCIENTIFIC ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS

Sunday, May 21, to Thursday, May 25, 1939 (Inclusive)

Headquarters: Hotel Roosevelt, New York

About thirty nations of Europe and the Americas are expected to be represented.

SCIENTIFIC PROGRAM

Monday forenoon and afternoon, May 22, and Tuesday forenoon and afternoon, May 23 (addresses, papers, demonstrations).

OTHER ACTIVITIES

Sunday, May 21. Reception for distinguished foreign visitors.

Monday noon, May 22. Group luncheon.

Monday evening, May 22. Formal Convocation, followed by buffet supper.

Tuesday noon, May 23. Round-table luncheon.

Tuesday evening, May 23. Formal banquet.

Wednesday, May 24. Clinic and Hospital Day.

Thursday, May 25. International College of Surgeons Day at the New York World's Fair.

Special entertainment for the visiting ladies.

Special R. K. O. broadcast, 1,000 seats available.

Special tickets to Hayden Planetarium.

Motor bus tours of New York City.

Trip to Chinatown.

Visits to American Museum of Natural History and Metropolitan Museum of Art.

Radio broadcasts by distinguished surgeons.

The delegates of the International Congress of Military Medicine and Pharmacy will be our guests at our various social functions at the Hotel Roosevelt.

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VISITING SURGEONS ARE WELCOME

FOR DETAILED INFORMATION ADDRESS DR. EDWARD FRANKEL, JR., 217 EAST SEVENTEENTH STREET, NEW YORK CITY

Meetings and Congresses

Second Annual Assembly of the United States Chapter

of the

INTERNATIONAL COLLEGE OF SURGEONS

Philadelphia, Oct. 13 and 14, 1938, Bellevue-Stratford Hotel

ANDRÉ CROTTI, M.D., *President*

MOSES BEHREND, M.D., *General Chairman*

Three hundred and eleven surgeons from 39 states and 6 foreign countries participated.

Dr. Moses Behrend appointed the following committees:

Committee on Scientific Program: Dr. W. Wayne Babcock, Chairman; Drs. P. Brooks Bland, E. L. Eliason, William Bates, D. Roman, Walter I. Lillie, Temple Fay.

Committee on Clinics: Dr. William Bates, Chairman; Drs. Thomas A. Shallow, Walter I. Lillie.

Ladies' Entertainment Committee: Mesdames Chevalier L. Jackson, W. Bates, W. I. Lillie.

Committee on Publicity: Dr. Temple Fay, Chairman; Drs. John Royal Moore, Thomas A. Shallow.

Committee on Hotel Reservations: Dr. M. A. Weinstein, Chairman; Drs. D. Roman, Earl Craig.

Committee on Banquet: Dr. Chevalier L. Jackson, Chairman; Drs. M. A. Weinstein, Earl Craig.

SCIENTIFIC PAPERS

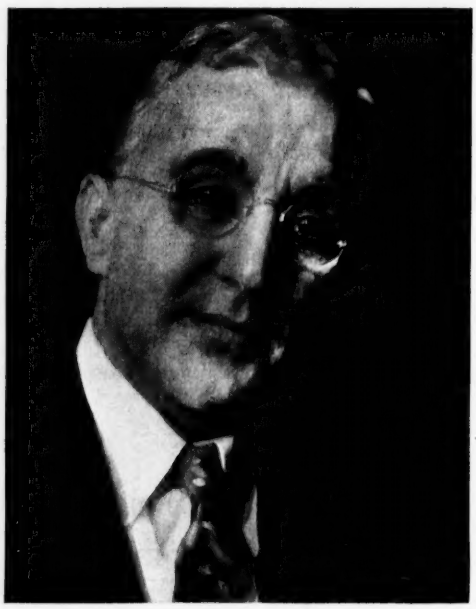
Thursday, Oct. 13, 2:00 p. m.

MOSES BEHREND, M.D., *General Chairman, Presiding*

The Meeting was called to order by Dr. Behrend. Invocation by Rev. William F. Fineschreiber. His Honor Mayor S. Davis Wilson was represented by Dr. William C. Hunsicker,[1] Director of the Public Health of Philadelphia, and His Excellency Governor George H. Earle by Dr. Edith MacBride-Dexter, Secretary of Health of the Commonwealth of Philadelphia.

1. Dr. Hunsicker died January 10.

DR. WILLIAM C. HUNSICKER, Philadelphia: It is fitting for surgeons to convene in Philadelphia, as this is the birthplace of American medicine. To John Kearsley, a native son, belongs the credit for acting as preceptor for young men desirous of studying medicine, as early as 1717. Dr. Thomas Cadwalader was the first surgeon of Philadelphia to receive his medical education abroad, the first to make a necropsy for scientific purposes and the first to use electricity in the treatment of disease.



Moses Behrend, M.D., F.A.C.S., F.I.C.S., General Chairman of Assembly.

Dr. John Morgan and Dr. William Shippen, Jr., were contemporaries in colonial times. Both were interested in supplanting the old apprentice system of medical training by medical school education. Morgan was instrumental in founding the first medical school in America, later to become the medical department of the University of Pennsylvania. Shippen was a pioneer teacher of obstetrics and was the first to dissect human bodies.

Dr. Thomas Bond in 1756 performed the first recorded lithotomy in America, at the Pennsylvania Hospital. He also devised the Bond splint. Dr. John L. Hodge invented a pessary and obstetric forceps. Dr. S. D. Gross devised a transfusion apparatus, foreign body extractor, bullet probe, artery forceps, tourniquet and splints.

Benjamin Rush is credited with being one of the greatest clinicians this country has produced. Dr. D. Hayes Agnes was revered as a surgeon, and his assistant, Dr. J. William White, was also well known.

Among more recent surgeons might be mentioned W. W. Keen, pioneer in brain localization, a Civil War surgeon and a writer; Dr. J. Chalmers DaCosta; Dr. Joseph Price, pioneer in modern asepsis hastening the surgical triumphs in gynecology and obstetrics; Dr. John B. Deaver, and his almost equally famous brother, Dr. Harry C. Deaver; Dr. George E. de Schweinitz, world-famous ophthalmologist; Dr. Edward Martin; Dr. John G. Clark, noted gynecologist, and Dr. William B. Van Lennep.

The first hospital in the United States, the Pennsylvania Hospital, was founded in Philadelphia in 1751, through the efforts of Dr. Thomas Bond and Benjamin Franklin. The first American school of anatomy was established here in 1762 by Dr. William Shippen, Jr. At the second convention of the American Medical Association, held in Philadelphia, representatives of 28 colleges and 40 medical societies were present; Philadelphia has been designated as the birthplace of the American Medical Association. The Philadelphia General Hospital is world-famous.

The citizens of Philadelphia take pride in the fact that leading surgeons from all over the country have come here to discuss important problems in the field of surgery.

DR. EDITH MACBRIDE-DEXTER, Harrisburg, Pa.: After the Governor took his office, he made a tour of inspection of the state institutions and found that they had not had attention for a number of years; many of them were fire hazards. He immediately took steps for improvement. Then he created the General State Authority, with a building program of $65,000,000. Part of this sum is spent on state educational institutions, teachers' colleges and welfare institutions.

There are 10 surgical hospitals in the anthracite coal region; there are a dozen hospitals to care for the mentally ill, 1 hospital for epileptics and 2 for feebleminded children. There are 3 sanatoriums for tuberculosis patients and a hospital for crippled children. A new hospital is being built in western Pennsylvania, which will

Edith MacBride-Dexter, M.D., Secretary of Health of the Commonwealth of Pennsylvania.

have 50 beds for patients with the adult type of tuberculosis and an annex for 50 children with the adult type of tuberculosis, a nurses' home and quarters for nonpatient and patient employees.

Mt. Alto was built about thirty-three years ago, with wooden type construction, with the expectation that tuberculosis would be a thing of the past in about twenty-five years. There is a cottage type for taking care of camp cases, and since we feel that tuberculous patients should be given bed rest, the institution is being practically rebuilt. There are 650 beds for adult patients, 50 beds for children who have the adult type of tuberculosis, a preventorium for 325 children, nurses' home and other necessary buildings.

At Hamburg accommodations are being built for 200 tuberculosis patients. The surgical unit there is unique in the United States. Dr. Behrend has charge of the surgery, and the structure is almost entirely of his planning. There are 2 modern operating rooms, an x-ray department and beds for 38 patients. This surgery has been in use a year and a half.

After the building in western Pennsylvania is completed we intend to put in a surgical unit there. We are also putting one in at Mt. Alto.

Dr. Hunsicker has told of the surgeons in the past. In addition I pay my respects to Dr. Behrend, to Dr. Chevalier Jackson, the outstanding man of the world in his specialty, and to Dr. Fraser, one of the noted brain specialists of the world. In the name of the Governor I extend greetings from the Commonwealth of Pennsylvania.

ANDRÉ CROTTI, M.D., *President, in the Chair*

GASTRECTOMY FOR VARIOUS CONDITIONS. DR. JOHN F. ERDMANN and DR. HAROLD E. CLARK, New York.

This paper appears in full elsewhere in this issue.

DISCUSSION

DR. JOHN J. GILBRIDE, Philadelphia: The stomach is the most frequent site of cancer. Of deaths from cancer in the United States for 1932 and 1933, 25,909 were reported to be due to cancer of the duodenum for 1932 and 26,565 for 1933. Cancer occurs but rarely in the duodenum, so these figures apply almost entirely to cancer of the stomach.

Great progress has been made in recent years in the diagnosis of cancer of the stomach as well as of cancer of other regions of the body. The outstanding factor in management is the late date at which patients suffering from stomach disease consult a physician for diagnosis and treatment. Many of those patients when they have so-called indigestion treat themselves by some preparation purchased in the drug store or mentioned over the radio. Persons who recommend over the radio or otherwise medicines for treatment of disease should be compelled to pass an examination by a state board of medical examiners.

The most frequent site of cancer of the stomach is the pylorus. This region is accessible for examination, and the disease when located here usually produces symptoms of obstruction comparatively early. When the disease invades the lesser curvature, the cardiac end or the fundus, diagnosis offers some difficulty because of the lateness of severe symptoms and the inaccessibility of the parts to physical and roentgen examination. I have seen and examined at autopsy 3 patients with cancer of the fundus of the stomach that had ulcerated through the diaphragm and produced abscess in the thoracic cavity; 7 with cancer of the stomach near the cardia were seen and examined at autopsy in whom there were slight or few symptoms of obstruction of the esophageal opening into the stomach. The cancer in 2 of these cases spread over the stomach wall in racemose form and revealed only waves of thickened mucous membrane.

The results of operation for cancer of the stomach, when the disease is mainly in the stomach, especially in the pyloric region, are good even in patients in whom the disease has extended to a lymph node near the pylorus or caused a slight nodule in the liver; radical operation may prolong life for one or more years.

In the treatment of cancer of the stomach one has to contend with months or years of delay before the diagnosis is made. Therefore every person with symptoms of indigestion not definitely assigned to other disease should consult a physician.

DR. BENJAMIN I. GOLDEN, Elkins, W. Va.: I wish to emphasize the value of the passing of the Levine tube. Within the past seventy-two hours I have seen three perforations, one occurring six weeks after an operation. For the past year my associates and I have passed the Levine tube and carried it through into the duodenum during operation.

It has always been a problem to me to start fluid into either the stomach or the intestinal tract. When the duodenal tube is in place one is able to start fluid intake earlier than without it. If the intestines are working and absorption is taking place, one is safe in passing fluids.

After passing a small amount of methylene blue and checking the kidneys by catheterization, if the methylene blue is found to have passed through the kidneys we know that the intestinal tract is acting in a normal physiologic way and therefore we feel safe in passing fluids into it. If methylene blue does not pass, we withhold fluids by mouth or through tube until such a time as it does. I believe that we have avoided many postoperative complications by this method.

DR. MAX THOREK, Chicago: One cannot always do a gastrectomy if the condition of the patient is precarious. Under those conditions we resort to surgical generalship, that is, doing as little as is consistent with the condition and safety of the patient. A Péan-Rydgier-Billroth II operation in its various modifications is resorted to.

A great deal has been written on the so-called oblique gastro-enterostomy. Prof. Alexander Stanischeff stated that with the methods used today there is no such thing as an oblique stoma resulting. He has devised a method which he calls gastro-enterostomia anterior oblique, which is simple and which is done by grasping the anterior wall of the stomach tangentially to the direction of the stomach and picking up about 20 cm. from the ligament of Treitz a loop of

jejunum with a clamp, turning both clamps acutely and doing a gastrojejunostomy. When the clamps are released there is a vertical line which, after a time, proves to give a definite oblique stoma. Dr. Phil Thorek has experimented on animals and has proved that to be true. Thus with the Stanischeff procedure a true oblique jejunostomy opening is produced.

A potent factor stressed by Dr. Erdmann is the importance of the Jaboulay-Brown procedure, and it was gratifying to hear him say, "For safety's sake I do a jejunojejunostomy." Many a life has been lost, I feel, by neglecting the addition of a simple jejunojejunostomy of the Jaboulay-Brown type to the gastrojejunal anastomosis.

Dr. Erdmann stated that he is partial to silk as suture material, and it is interesting to know that the pendulum as to silk or catgut is rapidly swinging in favor of silk.

MOTION PICTURES OF THE HUMAN LARYNX: SURGICAL SIGNIFICANCE IN NORMAL AND ABNORMAL STATES. DR. WILLIAM A. LELL, Philadelphia.

This paper will appear in full in the following issue.

EXTRAPLEURAL THORACOPLASTY: FURTHER EXPERIENCES WITH A MUSCLE-SPLITTING OPERATION. DR. JEROME R. HEAD, Chicago.

This paper will appear in full in the following issue.

P. BROOKE BLAND, M.D., *Acting Chairman*

DISCUSSION

DR. MOSES BEHREND, Philadelphia: I believe the muscle-splitting operation is a step forward in the performance of thoracoplasty. We have not used it either in the Philadelphia General Hospital or at Hamburg, Pa., but I feel sure that with all the technical methods that prevent destruction of tissue it is an advance in the technic in performing any operation; therefore it ought to be used, and my associates and I will endeavor to use it in our work in thoracic surgery .

I was particularly pleased at the methods of removing the ribs that Dr. Head formulated in his pictures; the results speak for themselves.

LESIONS OF THE CRANIAL NERVES. DR. WALTER E. DANDY, Baltimore.

This paper appears in full elsewhere in this issue.

Thursday, Oct. 13, 8:30 p. m.

MOSES BEHREND, M.D., *General Chairman, Presiding*

Dr. Charles H. Arnold, Secretary, read a letter from the library committee of the College of Surgeons of Philadelphia, inviting the members and guests of the International College of Surgeons to visit the library and museum.

Dr. Behrend spoke about the Transactions and announced the clinics to be held Friday morning and the banquet to be held Friday evening.

ANDRÉ CROTTI, M.D., *President, in the Chair*

DIFFERENTIATION BETWEEN VISCERAL AND PARIETAL PAIN IN SURGICAL DIAGNOSIS. DR. WILLIAM BATES, Philadelphia.

This paper will appear in full in the following issue.

DISCUSSION

DR. VINCENT A. LAPENTA, Indianapolis: We have all seen occasionally a patient who continued to have pain at regular intervals after the appendix was removed and who was found to have ileo-epigastric neuralgia of the twelfth nerve or intercostal neuralgia, and it was humiliating to see him cured by a few cubic centimeters of novocain given at varying intervals, or by a little neocaine, caffeine or an analgesic drug and some corrective exercise. So one can readily see the value of the method Dr. Bates has described, from both a diagnostic and a therapeutic standpoint.

DR. T. F. BEVERIDGE, Muscatine, Iowa: What effect do hypodermic injections of morphine have on the differential valuation of these symptoms? For instance, a physician often sends a patient with acute appendicitis to the hospital who has already been given a hypodermic injection of morphine.

DR. WILLIAM BATES, Philadelphia: I think administration of morphine before there has been an opportunity to make a differential diagnosis would be most confusing. Morphine relieves not only the visceral tenderness but also the sensitiveness of the superficial nerves. Novocain is much less dangerous preoperatively than morphine, in a case of suspected appendicitis, until one decides to operate. The time for giving morphine is only after the patient has consented to the operation.

DR. HENRY M. SCHEER, New York: One does not have to be reminded of the great relief given by injection into the spinal palatine ganglion through the posterior palatine canal, of the various pains referable to the sinuses, frontal region and any portion of the face. Any one who has done a moderate amount of rhinologic work has noted that administration of 10 per cent cocaine on an applicator, pledget cotton, even through the nasal chamber, just behind the pos-

terior tip of the middle turbinate, frequently gives a few minutes' relief of the pain; this measure applied frequently will help one make a differential diagnosis of conditions in any of the sinuses or in the nose.

Dr. George J. Miller, Brooklyn: Dr. Bates' method of differentiation would apply to an adult who can express himself and locate the ailment where he imagines he has it. I should like Dr. Bates to enlighten us as to how he would determine the same lesion in children on whom one is called to operate—those aged, 3, 2 or 1 year, or less, as in the case of an infant 2 days old on whom I operated and found appendicitis.

Dr. William Bates, Philadelphia: Dr. Miller has brought up a difficult phase of differentiation, one that has prevented therapeutic work from advancing with the diagnostic, because interpretation of pain is subjective, and to get the cooperation of an infant is difficult. But in certain cases the tenderness overlaps the area, and one can pick up areas off the region of the appendix, such as the buttock, the inside of the thigh and the area below the groin, which have different sensations on the two sides, even in young infants.

I do not advocate the injection of novocain. I depend on my attempt to differentiate the symptoms, and on the collateral signs of disease, which are sometimes slightly more marked in infants than in adults.

As far as adults are concerned, with this method of differentiation one has a further help, with which I hope to put tenderness in the objective column. If one has a patient who is sensitive to pinch and to poke and who states that he has pain in a certain place, and one finds tenderness in the same place on palpation, a thermoscope reading will show a lower temperature over the area of pain as compared with the opposite side. But if a patient has pain and does not have tenderness but says that he has tenderness, and if the thermoscope reading is the same as on the corresponding area on the opposite side where he does not claim to have tenderness, he is not telling the truth. The compensation board in Pennsylvania is beginning to take our word for this.

Moses Behrend, M.D., *General Chairman, Presiding*

Analysis of 537 Hysterectomies. Dr. James E. King, Buffalo.

This paper will appear in full in the following issue.

DISCUSSION

Dr. P. Brooke Bland, Philadelphia: A presentation of one's personal experience is interesting and constructive. It is an inventory of what one is or is not accomplishing and should be practiced more frequently. By it one is enabled to determine the presence of weak links in one's technic and take steps to correct them. But, more important, one is enabled thereby to determine both the immediate postoperative results and results that may occur some months or years later.

If I were to review my work regarding hysterectomy, my figures would almost parallel those quoted by Dr. King, except possibly the mortality. The figures he quoted with regard to that are the lowest I have heard or seen reported for a long time.

I know all the members were impressed with his reference to the character of the operations he performed. In the 537 hysterectomies, he resorted to the supravaginal operation 519 times. It is my custom also to do supravaginal hysterectomy whenever possible. I prefer it to complete hysterectomy because it is much easier to do, and I think that is the reason most surgeons prefer it.

Often I find some complication in the cervix—some condition complicating the fibroid tumor or whatever may be in the uterine body. I follow the same course practiced by Dr. King. If the cervix is extensively diseased, I do a complete hysterectomy. If the cervix is amenable to repair or to trachelectomy or cauterization, I precede the supravaginal hysterectomy by surgical repair or cauterization.

Dr. Peter Maras, Jersey City: I should like to ask Dr. King if he has a routine method of preparing his patients for that operation. I should also like to ask how often he has met with dehydration following his operation, and I am particularly interested in knowing what his postoperative routine is.

Dr. James E. King, Buffalo: Usually if a patient has any indication of a constitutional condition, we keep her in the hospital for two days before operation and study the blood and urine. Then, if required, we induce a sweat to open up the sweat glands (I am old-fashioned enough to believe in this). With such treatment I have never seen postoperative dehydration. An energetic resident physician usually has a needle in the patient's vein if there is danger of dehydration, and, while I do not believe in that, when the patient is not taking water or if there is any evidence of lack of fluid in the body, we always, of course, introduce fluid under the skin. Practically all the patients get water in some way.

My routine care after operation is mostly to leave the patient alone, and I think that is the best care she can get. One of my difficulties is with patients sent in by physicians, who usually

wish to begin immediately to give the patient something to relieve her nausea or to give other drugs. The patient receives a little morphine, perhaps 1/6 or 1/4 grain (0.01 or 0.02 Gm.), and a little tincture of opium in the fluid given by rectum; she is given all she wishes to drink, usually orange juice, and the third day the bowels are moved. We do not have much trouble with such patients, mostly, I think, because we leave them alone.

Dr. Richard A. Leonardo, Rochester, N. Y.: It has been maintained that if the cervix is left, a certain percentage of patients after several years will develop carcinoma of the cervix, and that the ultimate mortality is lower if the stump is removed than if it is left. I should like to know Dr. King's opinion on that point.

Dr. James E. King, Buffalo: I do not believe in taking out every cervix. If a cervix looked carcinomatous I would not take it out but use radium. I have not mentioned any statistics here in regard to the number of patients treated after hysterectomy, but I think that for a woman who is well, younger than 60 and married, treatment is preferable to removal. The cervix is a valuable organ, and it is surprising how much one can do to make it more normal by cauterization.

I have seen carcinoma in none of my cases. This does not mean that it has not occurred, because many times others see my cases. I have seen, I think, 5 or 6 carcinomas occurring in the cervical stump, one a year after hysterectomy, which means that this woman at the time of her operation had a carcinoma started.

Dr. André Crotti, Columbus, Ohio: There are two schools of thought in regard to hysterectomy—the supravaginal, which has been presented by Dr. King and by the discussion of Dr. Bland, and the abdominal.

The reasons for the more extensive operation are many, the first, which has already been mentioned, being the danger of carcinoma of the stump of the cervix following the supravaginal procedure. I have seen 18 carcinomas of the stump. As I am the head of the Cancer Clinic at Columbus, I see patients coming for consultation who have been operated on by other surgeons, sometimes ten or fifteen years before, and I had 3 patients of my own in whom this occurred, at a time when I was indulging in supravaginal hysterectomy. I am rather partial to abdominal total hysterectomy (1) because of the incidence of carcinoma of the cervical stump after the supravaginal operation, (2) because of the infection that may occur in the veins with the supravaginal procedure and (3) because a number of patients who have had supravaginal hysterectomy return with a discharge, which demands one of the various cauterizations, hospitalization or office treatment, and especially conization, the coning out of the cervix, which means another operation. Perhaps the mortality for the abdominal operation is a little higher than that for the supravaginal, but it is compensated by the lesser morbidity and by avoidance of later repercussions, complications such as infection or malignant disease. So perhaps if the two series were compared, all in all, everything would balance. The operation of choice is, largely, I believe, a matter of individual temperament. I still feel much safer if I do an abdominal total hysterectomy—and that is what I do—unless the patient is a young girl who has never had children, in which case the supravaginal operation is better than a total hysterectomy.

Tests for carcinoma are unsatisfactory. I have carried out in the clinic 500 or 600 tests, but only once did I discover incipient carcinoma as shown by test.

Dr. King alluded to a complication temperature, unexplained temperature, and discussed the possible causes. One that is often overlooked is a mild form of femoral phlebitis. In another complication occasionally observed about four, five, six or seven days after an abdominal operation, hysterectomy included, the patient shows a slight, gradual rise in temperature, maintained for several days. Auscultation of the chest, examination of the kidneys and other examinations give negative results. But an x-ray of the chest will show in one or both of the lungs a small, well localized pneumonic focus, and the roentgenogram is typical. This lasts for three, four, five, six or seven days, then subsides and disappears.

Dr. Isaac Tractenberg, Brooklyn: Vaginal hysterectomy is, in the majority of cases, not an emergency operation. I believe that the cervix, if diseased, should be treated before hysterectomy is performed.

In cases of erosion of the cervix I think that the erosion should be epithelized before any operation is performed. Since 1930 in a series of about 80 cases I have used supravaginal hysterectomy—supracervical hysterectomy—and in every case I treated the cervix until it was thoroughly healed. I coned out the cervix and used phenol and alcohol. There were no deaths and no morbidity, and there was no discharge on follow-up of these patients.

Surgery of Cancer of the Larynx; Malignant Tumors of the Larynx. Dr. Gabriel Tucker, Philadelphia.

This paper will appear in full in a later issue.

DISCUSSION

DR. HENRY L. PICARD, Philadelphia: Operations on the neck have several difficulties. One of these is the infection prone to occur when one opens the pharynx. This infection is likely to be obstructive. The second difficulty is the wall of the esophagus and pharynx, which is so tenuous that it easily breaks down; so a secondary fissure in the neck that could be closed after a while, when complicated with infection, may keep the patient in the hospital for a long period.

Dr. Tucker's method of subperichondrial extirpation of the larynx leaves much more tissue than surgeons have been accustomed to deal with and doubtless affords a much better barrier against infection; in those cases the condition has not extended to the superglottic region, has not involved the glands of the neck. This procedure would seem to have a great advantage.

DR. CARL B. SPUTH, Indianapolis: I should like to ask about upward x-ray treatment in the operation.

DR. GABRIEL TUCKER, Philadelphia: In cases of cancer of malignant tumor of the larynx when we feel that there is no extension beyond the larynx we do not give radiation unless there is some evidence of gland enlargement. If that occurs later, the glands can still be removed. I believe that Dr. Barton, of the Mayo Clinic, was the first to suggest this; he said that even if there were glands in the neck it was well to take out the larynx first and remove the glands later. But we never give radiation unless there is tight growth.

DR. HENRY SCHEER, New York: I should like to ask Dr. Tucker whether he has had occasion to use suction during the postoperative care. He probably knows how Dr. John MacKenty used to put in a counterdrainage incision at the side of the wound and insert small tubes, through which special measures and suction were applied. His associate, Dr. Brandon, has reduced the amount of counterdrainage with fewer suction tubes, but still uses suction postoperatively.

It is a revelation to be able to see a postoperative wound that requires so much less postoperative care, and I should like to inquire whether this procedure has been applied over a period sufficient to enable one to determine whether suction might be eliminated postoperatively.

DR. GABRIEL TUCKER, Philadelphia: Little suction is required with drains. Dr. Brandon is responsible for the vertical incision. I had my early observation under Dr. MacKenty. We tried the cross-incision. Then I followed Dr. Brandon's method of the vertical incision, and the last step with this subperichondrial enucleation. My associates and I have used it for about ten years, but I have had the experience mentioned with the old technics. In fact, where the wound is sewed up several times, usually before final closure, we have put a tube all the way in the pharynx and used continuous suction to keep the saliva out while we were getting union in the repair. In the 4 patients we have treated in the last three months we have had no difficulty. One of these had extensive irradiation, and about six years after this treatment there was a recurrence in the larynx. We took out the larynx; there was some sloughing, and a fistula developed. But after the sloughing tissue came away, we sewed the wound together, and the first time the sutures held successfully. We did not have to put in any drains. The reason for that is that all the musculature is in the front of the neck. There is no tension, and when one brings the edges together they stay together. This method would be especially valuable for patients who have had recurrence following irradiation.

Friday, Oct. 14, 1:30 p. m.

ANDRÉ CROTTI, M.D., *President, in the Chair*

PHARYNGEAL DIVERTICULUM: ONE STAGE RESECTION. DR. THOMAS A. SHALLOW, Philadelphia.

This paper appears in full elsewhere in this issue.

DISCUSSION

DR. CHARLES H. ARNOLD, Lincoln, Neb.: Dr. Shallow has given a helpful discussion of treatment of a condition which is commoner than many believe. My associates and I have "stumbled onto" a number of these cases that have been overlooked by physicians, in which the condition had gone on for years until complications developed which I believe Dr. Shallow did not mention—the complications of bronchitis, which often develops in such cases and occurs through neglect and improper examination.

Dr. Shallow has made a valuable contribution in handling the condition through the one stage operation, because, as Dr. Crotti has well said, one does two stage operations sometimes to one's regret, because one is subjecting the patient to a double risk and prolonging his hospitalization. Another argument for the one stage operation is that the second operation in the two stage procedure is sometimes much more difficult than the first, owing to the fact that the sac is obstructed by the recently formed adhesions, and it is many times difficult to locate and recognize it, even when it is marked, as some surgeons have advised, by a stitch of black silk.

Certainly, with the help of a throat specialist, if one does not do the esophagotomy oneself, it would be simple to follow the technic, because this is clear in the first stage of the operation, except going in and lighting the sac; the transfixation of the sac is logical in a physiologic procedure.

DISCUSSER: I should like to ask Dr. Shallow if he has met with the same difficulties that I have. In two or three instances the sac was very thin and large and the slit in the esophagus unduly long, and in handling the sac I was confronted with the question of doing the operation in one stage. In fact, in one instance the esophageal wall was also so thin that the sutures did not seem to hold as well as I thought they should. In consequence, before moving the sac I made a flap, which I used to reenforce the esophagus.

Another reason why the one stage method is much better than the two stage procedure that my associates and I have used is because, if one waits eight or ten days, as we did, between the stages, there is a great deal of connective tissue formation, adhesions of the sac; the sac becomes almost inflamed and swollen, and one does not find the landmarks as well between the sac, the neck of the sac and the esophagus as with the first operation.

DR. THOMAS A. SHALLOW, Philadelphia: We all recognize that when the sac fills, the individual has food and débris in it, and when he goes to bed and gets to sleep, in turning over, much of that material passes along into the trachea and lungs, and chronic bronchitis and bronchiectasis develop.

Concerning the thickness of the sac wall, the main thing that my associates and I attempt to do is to get as thin a structure as possible. We remove layer after layer, as we wish only the mucous and submucuous coats of the pharynx to remain. With more than that there will be constriction of the pharynx, and in previous articles I cited cases in which it was necessary to repair resulting atresia of the pharynx and the esophagus. If one does not deliver the mucous and submucouus coats entirely, there will be a wide gap, the sutures will not hold, and if they are put in under tension there will be a leak.

I see no reason to continue using the two stage procedure, because, when one has finished the one stage procedure one immediately repairs the hernia. In the two stage procedure one only fixes the sac in the neck during the first stage, and when one dissects the sac or cuts it off and ligates it after a week or ten days the inferior and the cricopharyngeus muscle cannot be found, and there is healing by granulation, so one is not doing progressive surgery.

We once did primary stage resection of the colon, but now we do multiple stage colon resection, because the mortality was too high with the first procedure with a primary anastomosis. Thus there is a reason for doing stage resection in the colon that does not exist when one does two stage incision on the pharynx.

It once took us an hour and fifteen minutes to dissect the pharyngeal structures out carefully. We reduced the time to an hour, then to forty minutes, and we now require between twenty and thirty minutes to do the entire procedure. It cannot be done rapidly in the beginning. Care is needed, but the technic can be acquired by any general surgeon.

THE DUODENAL SYNDROME ASSOCIATED WITH ABERRANT SUPERIOR MESENTERY ARTERY. DR. FELIX CUNHA, San Francisco.

Owing to the illness of his mother, Dr. Cunha was not able to be present to read this paper. It will appear in full in the following issue.

PRESENT STATUS OF SURGERY OF THE GALLBLADDER. DR. JULIEN C. PATE, Tampa, Fla.

This paper will appear in full in the following issue.

DISCUSSION

DR. RICHARD A. LEONARDO, Rochester, N. Y.: I should like to ask Dr. Pate what he does for empyema of the gallbladder. Does he wait or does he operate immediately, and what procedure does he adopt? Does he merely drain, or does he attempt removal? Has he found sulfanilamide of value in the treatment of empyema or acute infection of the gallbladder, either preoperatively or postoperatively?

DR. JOHN E. CANNADAY, Charleston, W. Va.: I believe that Dr. Pate did not mention the favorable time for operation. I think that cholecystitis ought to come under somewhat the same category as appendicitis, and that if a patient has acute cholecystitis the period during the first attack is the best time for operation. After the patient has had one or more acute attacks, severe attacks of inflammation, proper and deep enucleation becomes progressively more difficult. During the first attack of acute disease of the gallbladder healing occurs easily and quickly.

Again, in some of the critical cases of gallbladder disease, invariably when the patient's life is endangered, I believe drainage may be a lifesaving procedure rather than cholecystectomy. One must be on the lookout for such conditions in the acute infections as gangrene of the gallbladder. Only a few days ago I operated for acute gallbladder disease, to find that the gall-

bladder was gangrenous and had perforated at one point, and it was apparent from study of the specimen that it was ready to perforate at several more points.

Dr. Max Thorek, Chicago: The question of cholecystectomy or cholecystostomy had its pendulum swinging vigorously a quarter of a century ago. Dr. Babcock will bear me out that thirty or thirty-five years ago when one went to medical society meetings the advocates of cholecystectomy and those of cholecystostomy were violent adherents of one or the other. It seems to me that the pendulum is now gradually gravitating to a central point, and that surgeons of mature judgment and experience do not suit the terminology to the scalpel but the condition of the patient to the modus operandi.

True, as Dr. Pate has stressed, the indications for cholecystectomy are different from those for cholecystostomy. Unfortunately, at the present time one finds in the literature expression of a tendency to subject patients to cholecystectomy in the acute phases of gallbladder disease, as stressed by Dr. Cannaday. With all due respect for Dr. Cannaday's judgment, I am in unreserved opposition to that view, for the following reason. If one recalls the outline given ex cathedra to medical students fifty years ago, one finds teachings that read as follows. "Never permit the sun to set, when you diagnose acute appendicitis, without removing the appendix. Never permit the sun to rise, when you diagnose strangulated hernia, without relieving that strangulation. Always open the abdomen in the following conditions: perforated lesions of the gastro-intestinal tract, acute infections of the pancreas, acute injuries to the abdominal viscera, acute forms of appendicitis, acute forms of cholecystitis, acute forms of salpingitis" and a number of other conditions.

Comparing the views of 1938 with those of fifty years ago, what does one find? The aphorism that the appendix must be removed before sunset or sunrise in cases of acute appendicitis is as true today as it was then. The aphorism that in cases of strangulated hernia the constriction must be relieved immediately is also as true today, as is that on the necessity of entering the abdominal cavity in acute perforations of the viscera. In acute pancreatitis and a number of other conditions this also holds good. But in regard to acute salpingitis the aphorism is false, and it is not practiced in the vast majority of cholecystitides.

There are still some eminent surgeons like Dr. Cannaday who advise operation for acute cholecystitis. But the concensus in the literature is not in this direction. I treat acute cholecystitis, invariably, as I treat acute salpingitis: I put the patient in Fowler's position, apply an ice bag to the right hypochondrium and give a sedative. I do not say morphea, because we do not give this; we give nitroglycerin, nitrates, and so on. The mortality is lowered by this conservative treatment.

Dr. Pate stressed the need or the advisability of closing the abdomen tightly after classic cholecystectomy. Where does bile seepage come from? He stressed, I believe that ligation of the cystic duct is of paramount importance in avoiding bile leakage. That seems to be contradicted by Bakes, who showed in a series of 400 cases that if one does a classic cholecystectomy and ligates the cystic duct, in the majority of instances (I think it was 394 or 395 of the 400) there still will be found some bile on the dressing. Bakes concluded, justly, and this is in accordance with my findings, that this bile leakage is attributable to the gallbladder bed and is only rarely from the cystic duct. Of course, if one ligates the cystic duct so powerfully, or if the cystic duct is so infiltrated, that it is torn through, that is a different story.

Should one drain in clean cases? Of course, one can "get away with" omission of drainage. I have closed the abdomen after a classic cholecystectomy on some occasions, and nothing happened; but this is taking risks. As the late Lord Moynihan said, when asked why he drained his clean cholecystectomy cases, "Gentlemen, I don't see any other reason or any other explanation except to say that I call this a 'conscience' drain. My conscience won't bother me in case something goes wrong." Thus a cigaret drain is never going to hurt a patient and may save a life.

Dr. Frederick M. Douglass, Toledo, Ohio: Dr. Pate stressed that gallbladder disease is a disease of more than the gallbladder, that one must individualize each case. I am sure that each of the members here knows his own limitations, and his study of a case should guide him in the choice of procedure. To use a dogmatic procedure is a mistake in surgery of the gallbladder.

It must also be remembered that a large percentage of gallbladders perforate; probably 3 per cent of the gallbladders in a series observed by me have gone on to perforation. I believe that the acute case should be individualized, the patient prepared, and, at the surgeon's discretion, within from forty-eight to seventy-two hours, the procedure done. By individualizing these cases one will reduce the mortality and bring about the results that Dr. Pate wished.

Dr. Benjamin I. Golden, Elkins, W. Va.: An old dictum states: "Once an ulcer patient, always an ulcer patient." In the past few months I have heard several papers on the gallbladder. Each stressed the technical side. However, gall-

bladder disease is more than a strictly localized condition, as Dr. Pate has stated. From 20 to 30 per cent of the patients have recurrence of pain. All the members have probably had patients return after operation because of recurrence of the symptoms of gallbladder disease. I believe that when the gallbladder itself was diseased, whether stones were present or not, these patients should return to the medical department. They should understand that the removal of the gallbladder was an incident in the care of the disease, and that treatment should continue because there is involvement of a local gallbladder structure. There cannot be a diseased gallbladder without edematous cicatricial tissue in the common duct and likewise in the hepatic interstices.

It seems to me, with due respect for any scientific discussion of gallbladder disease, that one should speak of the patient with gallbladder disease (one speaks of the patient with ulcer).

DR. HENRY NORTH: Gallbladder surgery is the most unsatisfactory of all my surgery, and if there are 6 per cent of patients who are not satisfied with the surgery, I think I can get that percentage.

If the disease is in the liver, it seems that one has only started the cure of the patient when one removes the gallbladder.

As Dr. Thorek said, the pendulum swings both ways. Harsh words have been spoken about the surgeon who did not believe in taking out the gallbladder, and equally harsh remarks were made about the surgeon who did believe in taking it out. I have been on each end of the pendulum. I have tried taking the gallbladder out, and I have tried drainage, and I think about as large a percentage of patients come back within five years with their old trouble. I feel that little is known about the function of the liver, and a great deal more time should be spent in studying that function, with intelligent treatment following. In other words, whether we take out the gallbladder or not, let us follow up the treatment. There is a medical as well as a surgical side. Jaffé once said, "It isn't logical to take out the gallbladder. When this is done, one of two things happens: Either the muscle of the body hypertrophies or it doesn't. If it hypertrophies, that makes another gallbladder out of the biliary tract. If it doesn't hypertrophy, the contents of the duodenum back up, and there is a low grade infection in the biliary tract." Which horn of the dilemma should one take? The fact that nature makes a new gallbladder indicates that she must have some function for this organ, and in a large percentage of cases one does get hypertrophy and dilatation.

I was much interested in Dr. Thorek's remark about the bile not coming from a poorly tied cystic duct. In from 15 to 20 per cent of cases there is a large duct that enters the gallbladder directly from the liver, and if that opens up one will think that one did not tie the duct at all. And if one uses dyes, one will find that they go back up the duct just as though it had not been tied. So if one believes that the duct should be tied and the gallbladder removed, one should leave enough cuff to cover in the entire area, leaving no raw surface whatever. But I believe it would be more reassuring to have a tube there for a short while.

DR. W. E. MOWERY, Salina, Kan.: The regrets are just as painful when one loses a patient from drainage as when one loses a patient from cholecystectomy, and they are equally painful if one loses a patient without operation. So in order to make the pendulum reach the more or less perpendicular point one must be willing to regulate the case in such a manner as to use the best available aids. At one time it was suggested in certain states that laws be passed prosecuting a physician for removing an appendix that was not suppurative. The present view is that it is impossible to operate too soon on a patient who has acute appendicitis.

As Dr. Pate and Dr. Golden said, one is treating not only the gallbladder but also the patient; the gallbladder is only the avenue through which one recognizes the symptoms of the disease. If one can remove the gallbladder early, as Dr. Cannaday suggested, all the possible damage will not occur. The longer one waits, the fewer gallbladders and the more patients one must treat; consequently, in delayed cases one must begin to treat the patient by administration of sugar, blood transfusions and other aids before operation.

I have been on each end of such an operation. When my gallbladder became acutely inflamed I decided that I was in better physical condition to undergo any procedure at that time than I would be after I had been sick with the gallbladder disorder for several weeks. I was operated on that night, and was back at my work in eighteen days.

If surgeons are going to do operations for gallbladder disease late, they must treat the patient longer for preparation. If one operates early, the problem is simplified considerably.

DR. W. P. SAMMONS, Wheeling, W. Va.: The pendulum is swinging toward conservatism in gallbladder surgery. Cholecystography furnishes more information about gallbladder disease than any other diagnostic method, but it is not infallible. It is surprising how many nonvisualized gallbladders will become visualized after three or four weeks of medical treatment. A normal gallbladder may fail to be visualized because the

dye was not absorbed from the intestinal tract, liver damage may interfere with proper secretion of the dye, etc.

Gallbladder drainage is certainly preferable to removal in acutely ill patients and poor risks. I think we all agree that there is less risk in drainage, and the end-results, so far as cure or relief is concerned, compare favorably with those of cholecystectomy.

The mortality of operations on the gallbladder is about 2 per cent. Deaths from operation fall into three groups: (1) that with hemorrhage, shock, infection, pulmonary or cardiac conditions, etc. (about 0.9 per cent); (2) that with hepatic insufficiency, beginning about the sixth day; (3) that with high temperature, with coma, and death after forty-eight hours. The mortality in the so-called liver deaths is about 4 per cent of the total deaths.

I am particularly interested in the liver deaths. The liver function tests—the van den Bergh test, the amino-acid test and the carbohydrate tolerance test—are of questionable value. A low cholesterol content may indicate liver damage, but not always. Cholecystography is of no help in determining a damaged liver. On operation, the appearance and feel of the liver do not help one to foretell a liver death, and autopsy gives no information.

Dr. Thomas A. Shallow, Philadelphia: My experience with sulfanilamide has been so limited that I can draw no conclusions.

Dr. W. Wayne Babcock, Philadelphia: At one time I did cholecystectomy for acute gallbladder disease. The mortality was high. I turned to cholecystostomy, and I thought the results were better; but as time went on I found that I was having too high a mortality for cholecystostomy (up to 17 per cent). Then my associates and I discovered that when we took out the gallbladder during the first week of illness the patient usually lived, and that when we drained the gallbladder or took it out later than the first week, after infection had developed, higher mortality resulted.

We have been removing the gallbladder in the first week, and the results have been excellent. After the first week, or if there is evidence of infection around the gallbladder, a possible beginning abscess, we have come to be afraid of immediate drainage and do a stage operation We put a large glass chimney down against the gallbladder of a patient who has entered the hospital about nineteen days after the onset of an acute inflammation, with the omentum so plastered against the gallbladder that we realized that if we tore it off the gallbladder would probably rupture where it had perforated underneath. In three days we shall burn a hole through the glass tube and drain the bile, and a little later we shall take out the stones; if necessary, we shall take out the gallbladder at a later time, if the patient is not relieved or if we do not get all the stones out. So we think the problem of acute gallbladder disease is solved for us.

I have just come from a staff conference in which the question of preparing patients with jaundice for operations on the gallbladder arose. The preliminary administration of vitamin K with bile salt, and perhaps fats, was mentioned. This seems to be of value. Calcium and blood transfusions alone have not in the past given freedom from postoperative hemorrhage in all cases, as 1 patient in 30 with jaundice will bleed too much, and about 10 per cent of such patients have been dying despite the older remedies. I should like to ask Dr. Pate whether his experience with vitamin K has paralleled that of some of the physicians around here.

Another phase that has interested me is the colics that come on after removal of the gallbladder, which may be due to small stones, such as one does not find in the ducts. I have found it helpful to give the patients (I recall one woman, particularly, a morphine addict), certainly those with repeated frequent colic, 5 to 10 units of insulin twice a day. I have seen remarkable improvement and an apparent cure from this simple medication. Perhaps the results were brought about by changing the metabolism in the liver.

Like the other speakers, my associates and I drain the gallbladder, using a small rubber tube, which is pulled out the second day unless bile is flowing. For years we closed the incision tightly, unless there was some infection. Then we lost a patient on whom the operation seemed simple, from bile leakage; that was a lesson. The small tube does not always let one know that the patient has an internal hemorrhage or loss of bile, but I think it usually does, and, as has been said, it gives mental comfort.

Pathologic Basis for the Treatment of Prostatic Hypertrophy. Dr. David M. Davis, Philadelphia.

This paper appears in full elsewhere in this issue.

DISCUSSION

Dr. Vincent A. Lapenta, Indianapolis: The subject which Dr. Davis' paper brought up is of extreme importance because of the present popularity of the hormonal treatment. Everything that is so new in concept naturally will have to be carefully evaluated. The experimental work of Dr. McCullough on hypertrophy of the prostate in animals and the effects of testicular ex-

tracts, particularly testosterone propionate, is receiving considerable clinical confirmation throughout the world. It is now definitely established that the follicle-stimulating hormone of the pituitary has the same effect in the male as it has in the female. In the male it affects the same types of cell, the seminiferous structures of the testicle, and the agglutinizing hormone affects the interstitial tissue. And the same effects of the follicle-stimulating hormone in bringing about growth of the uterine musculature is displayed in the prostate, giving rise first to diffuse hyperplasia and hypertrophy and later to adenomatous formation. The agglutinizing hormone, conversely, brings about regression of the adenomatous mass.

There is one objective measurement of the results of such treatment: the quantity of retained urine. This, I believe, is a direct measurement. When one finds in cases of benign hypertrophy in which 150 or even 175 cc. of retained urine is measured immediately after careful urination, that retention is down to 15 or 20 cc. in three or four weeks and remains so, and that the patient instead of having to get up eight or nine times a night gets up only once or twice, this is objective evidence that the theory is sound. Of course, it cannot apply in cases in which the prostate has become fibroid, with adenomatous formation that has gone beyond the response of hormonal regression. Testosterone propionate acts by quieting the pituitary overfunction responsible for overproduction of the follicle-stimulating hormone that induces hypertrophy. This, I believe, is receiving considerable clinical confirmation by all who employ it in a sufficient number of cases with an open mind and with the objective measurement that I have mentioned —that of the retained urine.

DR. DAVID M. DAVIS, Philadelphia: I disagree with the previous speaker. The measurement of the residual urine is no index of real regression of the enlargement of the prostate. Residual urine changes tremendously in volume from time to time in the same individual, and may occur in normal individuals who have no enlargement of the prostate. It is an accurate measure of the degree of obstruction existing at the moment that the observation is made. However, that degree of obstruction varies tremendously according to temporary changes in the size of the prostate induced by such factors as vascular congestion and edema.

WHY DO NOT SUBCAPITAL FRACTURES OF THE HIP UNITE AS OTHER FRACTURES? DR. FRED H. ALBEE, New York.

This paper appears in full elsewhere in this issue.

DISCUSSION

DR. W. E. MOWERY, Salina, Kan.: Five years ago I said that the chapter on treatment of fracture of the hip would require rewriting. This has as yet not been done. I recently read an article which stated that Dr. J. Nicolaysen, of Oslo, Sweden, placed the first nail in a hip, so far as known, in 1879. Since then a great many different devices have been used.

I see more fractures of the hip today in young persons than I once did, largely on account of the greater number of automobile accidents. The mortality ranges from 10 to 20 or 50 per cent, depending on the age and condition of the patient.

Dr. Albee said that nonunion occurs in from 30 to 40 or 50 per cent of the cases and that the ligamentum teres is severed, with consequent necrosis of the head in 20 to 30 per cent of cases. At the outset one does not know which cases belong to this 20 or 30 per cent. Again, one does not know but that there may be additional blood supply to the head other than that afforded by the ligamentum teres.

In order to establish a working basis, one may classify fractures of the femoral neck into those just below the head (proximal or intracapsular), those through the center (intermediate), those through the distal end (basal) and those extending between the trochanters (intertrochanteric). Sufficient emphasis has not been placed on the difference in results in relation to the site of the fracture. One need not worry so much about the intertrochanteric fractures or fractures at the distal end of the femoral neck, as in these union will always occur. I think it is wrong to subject weak patients to immediate operation in the hope that union will occur and that the head will not be absorbed, since patients in a state of shock cannot stand any type of major operation.

A tremendous amount of harm results by not providing proper care of the patient during the first week or ten days of his recuperation. In order to make such patients more comfortable, in association with better nursing facilities one can apply a Thomas splint with Pearson knee flexion, using Kirchner wire and extension until the advisability of operation or other necessary treatment is determined. Time alone can determine whether or not necrosis of the head of the femur is developing.

I have used the bone peg on only three occasions. On two of these there was absorption of the peg, with poor results, and on one there was bony union, with a good result.

I feel that in order to get these patients out more quickly, especially if they are old, and back in their home surroundings, one is justified in using some kind of a nail. I realize that those used by Murphy and by Nicolaysen in 1879 were of a different type than are used today. The

improvement in steel with greater knowledge concerning the tolerance of tissue to various kinds of steel has made nails more useful. Today I saw Dr. Wayne Babcock sew the peritoneum with steel wire which he used throughout in the fascia and various layers of the abdominal wall. I do not believe that steel wire obtained thirty or forty years ago could have been thus used.

The Whitman treatment of extension, abduction and internal rotation necessitates placing the patient in a cast for weeks, which frequently he will not stand.

The nail that my associates and I have used in about 15 cases has been the Austin Moore type, selected because we felt that it would destroy less tissue and still hold the hip in good position.

As Dr. Albee has well said, one does not need many gadgets in order to nail these hips, once one gets bearings. By connecting the anterosuperior spine of the ilium and the symphysis pubis with an imaginary line, and intersecting its center, a valuable landmark is established. An incision is made over the greater trochanter. Just at its base will be found a small flat triangular space from which may be started a nail or drill directed upward toward the landmark established in the center of the intersected line. One will be surprised to find how frequently the drill or nail will be exactly in the center of the neck of the femur.

Dr. W. P. Sammons, Wheeling, W. Va.: Rupture of the ligamentum teres is difficult to diagnose. We often get good results without absorption of the head by Whitman's method and other methods of close reduction.

Dr. Albee sees hundreds of these fractures, whereas the general surgeon sees only a few. And it is a pity, as Dr. Scudder brought out a few years ago, that treatment of fractures of the hip, as well as some other fractures, has never been standardized. With the advent of the "machine age" and rapidly moving forces these fractures are increasing daily. The general surgeons of the small towns are receiving their quota of these fractures.

The technic of open reduction must be made so simple that the general surgeon can apply it. On a recent trip to the European clinics I visited Prof. Arthur Chance at Dr. Steven's Hospital in Dublin. Mr. Chance used Sven Johansson's method—a modification of Smith-Peterson's method with Johansson's complete equipment of special instruments. Mr. Chance, with the cooperation of the roentgenologist, made the operation of open reduction seem easy. I witnessed a similar technic in Böhler's clinic in Vienna. This was carried out without the special instruments of Johansson. Again, I saw Professor Noordenbos, of Amsterdam, do a bone graft with a method similar to that of Dr. Albee. Noordenbos made the statement that he had about 20 per cent failures due to absorption of the graft and of the head. He keeps his patients in bed and in a cast for three months. He further stated that he has seen refractures after four months.

In my locality (the Pittsburgh district) we think that nailing, with Johansson's modification of the Smith-Peterson nail, is simple and practical. Three to five Kirshner wires are drilled into the head of the femur. Theoretically, the trauma of the numerous wires in the femoral head will help the blood supply. A check of the position of the wires is made by x-ray while the patient is on the table. The most accurate wire, as revealed by an anteroposterior and lateral x-ray view, is left in place; the others are removed. We then drive Johansson's nail over the Kirshner wire as a guide. The fracture is impacted by the final blow on the nail. A final check is made by the x-ray before the patient leaves the operating room. Immobilization with plaster is unnecessary. The patient can be up in a chair in a few days, and six weeks in the hospital is the average stay.

We think this method is simple and practical in that it requires only the average hospital equipment and can be done rapidly by the general surgeon of average skill.

Dr. Peter Maras, Jersey City: Dr. Albee has called attention to the fact that one cannot accomplish a perfect result after the head of the femur is absorbed. He does, however, recommend that when the tissue is fresh the result should be attempted.

One should be conservative. But what excuse or explanation can one give for situations in which a physician has done nothing, let the bone decay and then attributed the result to whatever struck his fancy? That is the reason for the poor results in some of the cases. So the fact should be stressed that repair is better done first than last. One must consider the cost to industry, to say nothing of the disability to the patient.

Dr. Fred H. Albee, New York: I do not wish to go on record as opposed to "hardware," but I do wish to make the point that if "hardware" is permissible for fractures other than that of the central portion of the neck of the femur, I do not believe it is permissible there except on rare occasions—in a very old case or some similar instance.

It has been mentioned that it is easier to use metal than something that might be a little more difficult. One does not apply that yardstick to surgery of the gallbladder or to urologic or pulmonary surgery these days. The main trouble with these problems in bone surgery is that the

easiest method is the one that is many times selected, and I wish to take issue with that attitude.

Apparently I did make the point that the head of the femur, when the fracture is through the central portion of the neck, is essentially a joint mouse. If it is a joint mouse, what chance does one have to put Kirshner's wires, etc., through it and get it to unite to the shape of the bone?

I do not see how the type of metal is germane to the discussion. The point I made was that the treatment of the central portion of the neck of the femur should be based on three needs. The first requirement is mobilization. The kind of metal used has not much to do with that. But there are two other requirements perhaps equal in importance, namely, bringing a blood supply to the head of the femur, and bringing about bone growth—callus-forming capability—for the fracture junction.

The metal now used is better tolerated than that formerly used, in many instances, but it is a foreign body. I did a tremendous amount of work in the army, taking out pieces of shrapnel and other shells. I do not believe the metal nail is much different; whether it is covered with chrome plate or not, it stimulates infection and destroys tissues.

The difference between transtrochanteric fragments and fractures of the central portion of the neck of the femur has been mentioned. When there is a fracture through the trochanter, this unites, and one can put such fractures in the same classification as a fracture in the shaft of the bone lower down, or a fracture of the tibia. The fracture comes so that it splits the soft portion into two parts, one attached to the inner fragment, and the other to the outer fragment, and those soft parts serve as conducting scaffolds of blood supply to both fragments. But a fracture 2/3 to 3/4 inch (1.7 to 1.9 cm.) farther in would be completely within the hip joint, and the only possible source of blood supply would be from the ligamentum teres.

CLINICS

Thursday and Friday, October 13 and 14

Temple University Hospital Unit

General Surgical Clinics

Dr. G. Mason Astley: General surgical clinics, 10 to 12 a. m., October 13.

Dr. W. Wayne Babcock: General surgical clinics, 8 to 12 a. m., October 13 and 14.

Dr. John Royal Moore: Femoral shortening for equalization of length of lower extremities. Shelf operation for congenital dislocation of the hip. Anterior positioning for congenital dislocation of the hip. October 14 at Shriners' Hospital.

Dr. J. Norman Coombs: General surgical operations. Peritoneoscopy. 9 to 12 a. m., October 13 and 14.

Thoracic Surgery

Dr. W. Emory Burnett: Thoracic surgery, 10 to 12 a. m., October 13 and 14.

Dr. Louis Cohen: Clinic on compression therapy in pulmonary tuberculosis and demonstration of pneumothorax refills, fluoroscopy of pneumothorax patients, 9 to 12 a. m., October 13.

Gynecologic Surgery

Dr. Harry Duncan.

Rectal Surgery

Dr. Harry E. Bacon: Rectal clinic, 10:30 to 12 a. m.; operative clinic, 3 p. m., October 14.

Ophthalmologic Clinic

Dr. W. I. Lillie.
Dr. C. L. Jackson.

Otologic Clinic

Dr. Matthew S. Ersner: Otologic surgery, 2 to 4 p. m., October 13. Dry clinic, 2 to 4 p. m., October 14. Also, discussion: Surgery for the deaf (otosclerosis).

Jefferson Hospital Unit

Plastic Surgery

Dr. Warren B. Davis: Maxillo-facial surgery, 9 a. m., October 13.

Gynecologic Surgery

Dr. P. Brooke Bland: Plastic operations, 10 a. m., October 13.

Dr. Brooke M. Anspach: Treatment of myoma uteri, 11 a. m., October 13.

Genito-Urinary Surgery

Dr. David M. Davis: The importance of ureteral obstruction in urology, 12 a. m., October 13.

Radiology

Dr. Karl Kornblum: Some important considerations in cholecystography, 9:30 a. m., October 13.

Otologic

Dr. Horace J. Williams: One or two radical mastoidectomies, 10:30 a. m.

Orthopedic Clinic

Dr. Arthur J. Davidson: Orthopedic, 9 a. m., October 14.

Obstetrics

Dr. Norris W. Vaux: Sodium amytal in controlling the convulsions of eclampsia, 10 a. m., October 14.

General Surgery

Dr. Thomas A. Shallow: Para-esophageal diaphragmatic hernia or carcinoma of the rectum, 11 a. m., October 14.

Ophthalmologic Clinic

Dr. Charles E. G. Shannon: Chronic simple glaucoma, 10:30 a. m., October 14.

Philadelphia General Hospital Clinic

Thoracic Surgery

Dr. Moses Behrend; Dr. Richard H. Meade, Jr.; Dr. Rubin Lewis; Dr. Albert Behrend: Extrapleural pneumothorax thoracoplasty, 9 to 10 a. m., October 13.

General Surgery

Dr. J. C. Howell: Carcinoma of the breast, 10 to 11 a. m., October 13.

Dr. L. K. Ferguson: Clinic on hernia surgery of lower rectum and anal canal, 11 to 12 a. m., October 13.

Dr. Hubley R. Owen: Dry clinic—fractures, 10 to 11 a. m., October 14.

Dr. P. A. McCarthy: Arterial surgery, 9 to 10 a. m., October 14.

Dr. William T. Lemmon: Diseases relieved by operation on hypogastric plexus, 11 to 12 a. m., October 14.

St. Lukes and Childrens Hospital Unit

General Surgery

Dr. D. Roman: Operations on the thyroid gland. Cancer of the colon. Cancer of the breast. 9 to 12 a. m., October 13 and 14.

Gynecologic Surgery

Dr. L. Averett: Vaginal hysterectomy. Plastic surgery. 9 to 12 a. m., October 13 and 14.

University Hospital Unit

Dr. E. L. Eliason, Director: General surgery.
Dr. I. S. Ravdin: General surgery.
Dr. A. Randall: Genito-urinary surgery.
Dr. F. E. Keene: Gynecologic surgery.
Dr. F. C. Grant: Neurosurgery.
Dr. Gabriel Tucker: Bronchoscopy.
Dr. George M. Coates: Otolaryngology.
Dr. A. Bruce Gill: General surgery.
Dr. L. K. Ferguson: General surgery.

Hahnemann College Unit

Dr. Earl Craig, Director: Gynecologic surgery.
Dr. G. Van Lennep: General surgery.
Dr. Leon Ashcraft: Genito-urinary surgery.
Dr. Thomas Doyle: General surgery.
Dr. Frank Nagle: Eye.

EXECUTIVE SESSION OF THE INTERNATIONAL COLLEGE OF SURGEONS

ABSTRACT OF THE MINUTES

Friday, Oct. 14, 5:00 p. m.

CONSTITUTION AND BY-LAWS. The meeting was called in accordance with Article I, paragraph 3, page 15, of the statutes as registered in Bern and in the twenty-seven cantons of Geneva, Switzerland, by the Director General, to pass on the new Constitution for the International College of Surgeons, copies of which had been submitted to the entire membership. The votes received were practically unanimous.

A motion properly placed and seconded for ratification and adoption of the new Constitution and By-Laws was unanimously carried.

The following *Resolutions* were then introduced for consideration and vote:

Be It Resolved, That Article IX*c* of the present Constitution and By-Laws, presently adopted, in view of its ambiguity, shall read:

The International Officers shall be as follows: first, the International President; second, the International President Elect; third, the International Vice Presidents, three to five in number; fourth, the International Treasurer; fifth, the International Secretary General.

That to Article IX*b* the following be added:

The world at large shall be divided into regions or continents, such as Europe, the Near East, Asia, the American Continents, etc.

At the head of each region there shall be a Regional Secretary and Treasurer. The number of Regional Secretary-Treasurers shall be dictated by the needs of the moment.

Article IXc: The governing bodies shall be, first, the House of Delegates; second, the Board of Trustees; third, the International Executive Council.

Be It Further Resolved, That to the present statutes under Article IV, having as recognized specialties eleven enumerated, a twelfth be added, to be known as "Proctology."

Be It Further Resolved, That in Article XIII, *Executive Council,* paragraph 1, *the world "five" be substituted for the word "three" and the word "General" be substituted for the word "Executive."*

That to Article X, *Legislative Body of the International College of Surgeons,* immediately following paragraph 3*c*, paragraph 4 be added, to read as follows:

In case of absence or nonexistence of the House of Delegates the Board of Trustees or the General Assembly shall constitute the legislative organization of the College.

The aforementioned resolutions were unanimously carried.

The audited Reports of the Financial Statements of the College were read and unanimously approved and accepted.

ELECTION OF INTERNATIONAL OFFICERS. Temporary Chairman Dr. Vincent A. Lapenta appointed the following nominating committee: Dr. Julian C. Pate, Tampa, Fla.; Dr. Benjamin I. Golden, Elkins, W. Va.; Dr. Charles H. Arnold, Lincoln, Neb.

The following were nominated and unanimously elected: International President, Dr. André Crotti, Columbus, Ohio; *International President Elect,* Dr. Fred H. Albee, New York; *International Vice Presidents,* Prof. Rudolf Nissen, Istanbul, Turkey; Prof. A. Mario Dogliotti, Catania, Italy; Prof. Alexander Stanischeff, Sofia, Bulgaria; *International Treasurer,* Dr. William Seaman Bainbridge, New York; *International Secretary General pro tem,* Dr. Max Thorek, Chicago; *Regional Secretaries General:* for Europe, Prof. Dr. Albert Jentzer, Geneva, Switzerland; for Asia, Prof. J. C. McCracken, Peiping, China; for Mexico, Prof. Dr. Manuel Manzanilla, Mexico City; for India, Dr. M. M. Cruickshank, Bombay.

Board of Trustees: Drs. André Crotti, Fred H. Albee, Arnold Jirasek, Rudolf Nissen, Mario Dogliotti.

Other vacancies to be filled at the next meeting of the International body.

INTERNATIONAL MEETING. Following a discussion as to the place of meeting, it was decided by unanimous vote to meet in New York City, from May 21 to 25, 1939.

ADJOURNMENT

ASSEMBLY BANQUET

Friday, October 14, 7:30 p. m., Hotel Warwick

Dr. Moses Behrend presided as toastmaster, invocation being pronounced by Rev. E. A. E. Palmquist.

Dr. André Crotti delivered his presidential address and conferred degrees on the candidates. Dr. Wilmer Krusen was the speaker of the evening.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Stop for Refreshment

Surgeons visiting the International Assembly exhibits are invited to visit Booth 21 and enjoy a refreshing drink of Kalak Water. Ask the Kalak representative to explain the buffer value of Kalak, and how this delicious, sparkling, neutralizing water may be employed to add to the comfort of the surgical patient.

Holland - Rantos Features

Holland-Rantos products, the Koromex diaphragm and jelly, and their newer items, the H-R Emulsion jelly and Koromex diaphragm introducer, will be on display at convention Booth 29. Please be sure to call and get your complimentary copy of the "Physician's Guide."

J. Sklar Exhibit

The J. Sklar Manufacturing Company will exhibit in convention Booths 33, 34 and 35 new suction and pressure apparatus, including the Improved Tompkins Portable Rotary Compressor, the De Luxe Tompkins, the new Imperatori apparatus for ear, nose and throat work, Ralks' Ideal Unit and Moorhead Unit for office and clinic, and the new, improved heavy duty hospital model of the Bellevue Suction and Pressure Unit. They will also show their Stainless Steel Surgical Instruments, as well as Davidson's Pneumothorax Apparatus, the Soresi Blood Transfuser, etc.

PRESIDENTIAL ADDRESS

ANDRÉ CROTTI, M.D., F.A.C.S., F.I.C.S.

Retiring President of the United States Chapter of the International College of Surgeons

COLUMBUS, OHIO

In behalf of the International College of Surgeons, let me first extend to you all a hearty welcome. Especially, do I wish to assure the Philadelphia Committees, which have arranged this wonderful program for the second annual meeting of the United States Chapter of the International College of Surgeons, that it has incurred the most profound gratitude of the College. In this respect, Dr. Moses Behrend, who acted as General Chairman, is entitled to great credit for this splendid success. Aided by his various able committees he has organized a brilliant meeting that it will be long remembered.

We are indeed grateful to His Excellency, the Governor of the Great State of Pennsylvania, for his message of welcome transmitted to the College through his charming representative, Dr. Edith McBride-Dexter, Secretary of Health.

In behalf of the college, it is my duty and pleasure also to thank Dr. William Hunsicker, Director of Public Health, Philadelphia, representing the Honorable Mayor of the city of Philadelphia. He delivered to the College a most interesting review of the medical achievements of Philadelphia in the past history of medicine.

Also, I am desirous to assure the management of the Bellevue-Stratford Hotel that the College is grateful for all the kindnesses and efficient services received during the meeting.

Since I have the honor to address you as retiring President of the United States Chapter of the International College of Surgeons, permit to review with you what has been accomplished during the two years of my administration.

First of all, let me define once more what the College really is, and what it stands for.

As I said last year, in my Presidential address, the word *"College"* means school, work, study. *College* means teaching. It means imparting knowledge to its adherents. The idea of a "loosely-jointed" organization, which meets only once in a while and loses sight of its members during the interim, is foreign to the idea of the College, because *"College"* means sustained contact with its various members not only at yearly intervals, but throughout the whole year.

Now, to those of you who have seen and read the first issue of the *Transactions of the International College of Surgeons,* and who have taken the trouble to read the new Constitution and By-Laws, it must be perfectly clear how these aims are to be attained.

Not only the bi-annual meetings of the General Assembly of the International College of Surgeons, not only the annual meetings of the various chapters of the College, not only their annual or multi-annual sectional meetings in the various parts of a given country, not only the publications of the *Transactions* will be a means of sustained educational contact among the general membership of the College, but we feel that the goal to be obtained will be better secured by the formation of *Clinical Groups or Guilds.* In my last year's presidential address I referred to them as organized postgraduate courses and surgical clinics conducted at specified intervals, at which the leaders will teach some of the finer points of surgery. The new Constitution refers to them now as *Clinical Groups or Guilds.*

These clinical groups are to be established in the various parts of a given country. Their number is unlimited and will be dictated by the needs of the moment. Overcrowding of a clinical group is to be avoided, since this would interfere with its efficiency. Participation in the activities of these various clinical groups is compulsory for all the associate members, for the members and

fellows of the College living in the district where these clinical groups function. When once these clinical groups will have been established, the College will have become a world-wide teaching association comparable to none and thus will have complied with the implied meaning of the word *College*.

Indeed, the International College of Surgeons does not desire to have in its membership the outstanding surgeons of the world *alone*. This has been accomplished already by many worthy organizations. What the College wishes, besides and uppermost, is to have these outstanding surgeons of the world act as mentors and educators for the rising generations of surgeons, who, in turn, will some day be the leaders. And this is the distinguishing characteristic which marks the College as an association of surgeons different from any other.

Permit me, at this point, to emphasize that the International College of Surgeons is not a competitive organization. It has no antagonistic plan toward any of the already existing associations, national or international. On the contrary, it desires to cooperate with and further the educational efforts of already existing organizations. In this country, the International College of Surgeons stands solidly behind the American Medical Association and the American College of Surgeons. The College wants and urges its members to belong to any kind of and to as many already existing reputable surgical associations as desired. The more the better, so far as the College is concerned. The College is not jealous and has no fear. The College would feel that it is below its dignity to urge *"Sectionalism"* in surgery. The College feels that surgeons have at any time and at any place the right to organize themselves into a new Society, if they so desire, provided, of course, that their motives are above suspicion. To interfere with such a right is, in the opinion of the College, to interfere with *academic liberty*, which is, and has always been so dear to the medical profession. Such methods of interference would smack too much of "trade-union tactics." If the College is only too willing to respect the rights of others, it will in turn demand that its rights be respected also. And why should it not be so, since we are all striving unselfishly for the same goal, although in various ways?

Permit me to review with you what the United States Chapter of the International College of Surgeons has accomplished in the past two years.

Our present United States Chapter was organized in early December 1936. At that meeting I had the great honor of being elected President.

The hearts of the members attending the meeting were gladdened by the generous gift of Mrs. William Randolph Hearst, of New York City, who, through her friend Dr. Max Thorek, of Chicago, presented the College with a building to be used as a Museum for the College. This gift will become the property of the College only when the College becomes financially able to carry it. I take great pleasure at this time to assure Mrs. William Randolph Hearst that the College is profoundly grateful to her for her generous and friendly gesture.

Thanks to the efforts of Dr. Vincent Lapenta, Chairman of the Board of Trustees, the United States Chapter of the International College of Surgeons was incorporated according to the laws of the State of Illinois. This was done in the early part of 1937.

In the early part of June 1937, the first scientific meeting of the United States Chapter was held, in New York City. The General Chairman of the meeting, Dr. A. A. Berg, of New York City, and his very able and efficient committees made this meeting an outstanding one. It gave to the College an impetus which nothing else would have done. The presence of His Excellency,

Governor Lehman, of the State of New York, who made a special trip to come and open the meeting, did much towards that end. The July issue of the *Transactions* reports in full the activities of this meeting.

The meeting was concluded by the distribution of the College diploma to the fellows. In this diploma I have endeavored to embody the aims of the College and the guiding principles of its members. It is my fond hope that every member and every fellow will be always proud to possess it.

In February 1938 a meeting of the Southern states was held in Tampa, Fla., thanks to the untiring efforts of Dr. Julian C. Pate, of that city. The attendance was unusually large and the scientific program of high educational interest. This meeting was fully reported in the October issue of the *Transactions.*

At the Tampa meeting it was my privilege and pleasure to announce that the United States Chapter of the International College of Surgeons would award prizes for the best original study in thoracic surgery, in neurosurgery, and in otolaryngologic surgery. The prize for thoracic surgery will be $500; the prizes for neurosurgery and for otolaryngologic surgery will be each a diploma of merit. The July issue of the *Transactions* gives all the necessary information which the applicant may desire.

The original Constitution and By-Laws of the International College of Surgeons contained certain defects, which have hampered seriously the development of the College. It became evident that a complete revamping of this Constitution and By-Laws had become necessary. In consequence, in July 1938 I submitted a new Constitution and By-Laws to Dr. Hunt, Director General of the International College of Surgeons, who approved them, and who issued at once the call for the first Executive Session of the International General Assembly to take place at the present Philadelphia meeting. At the same time a copy of the new Constitution and By-Laws was sent to each member and fellow of the International College of Surgeons, together with a voting blank for approval or rejection. As you know, the new Constitution and By-Laws have been adopted not only by the majority of the members and fellows voting by mail and by the majority of the Committee of Direction, but also by the General Assembly in executive session here at Philadelphia in conjunction with the meeting of the United States Chapter. In consequence, some of the impediments produced by the old Constitution and By-Laws have thus been removed.

In July 1938 the first issue of the *Transactions of the International College of Surgeons* appeared. I regard the appearance of this publication as an epoch-making event in the history of the College.

The *Transactions* constitutes a certificate of birth and visibility that nothing can replace. No organization with the aims and aspirations such as the College has can do justice to its tasks without having an official organ to represent it and, *if need be, to defend it.* An official organ is a necessity. So far as the International College of Surgeons is concerned, this official organ is now the *Transactions of the International College of Surgeons.* Its able Editor-in-Chief is Dr. Max Thorek, of Chicago. All of you have received the first copy of the *Transactions.* I hope you will agree with me that it augurs well for the future of the College. I dream of the *Transactions* as promising to become one of the most important surgical publications in the world.

It will interest you to know that I have written to the Kultus Ministerium of Turkey requesting it to release from his teaching duties — this for only a few weeks — the celebrated thoracic surgeon Professor Rudolf Nissen, who

is the First Vice President of the International College of Surgeons. Professor Nissen ranks high among the greatest authorities in thoracic surgery. If the Turkish Kultus Ministerium is kind enough to grant this contemplated leave of absence to Professor Nissen, he will, under the auspices of the United States Chapter of the College, deliver throughout the United States a series of lectures and demonstrations on thoracic surgery Thus the College intends to carry out its desire and to fulfil its mandate implied in the word *"College,"* namely, to facilitate education and to impart knowledge.

Today marks the end of the Philadelphia meeting of the United States Chapter of the College. About its glowing success I need not speak. You are the judges.

This, gentlemen, constitutes a brief résumé of the major activities which have taken place during my incumbency of the presidential office for the last two years. Some of you may have wondered at times what your Council and its President were doing, since there were periods during which nothing was said or heard of the College. I want those who may have been anxious to rest assured that no respite was ever indulged in by your Council and its President. These silences were *"gestation"* silences. No one of you will ever suspect the amount of work, worry, and, at times, discouragement at the obstacles encountered both here and abroad, which your executive officers experienced. Had it not been for the loyalty, determination, enthusiasm and valiance of the United States Chapter Council, I would never have been able to report to you all the various accomplishments of which I have just spoken.

I wish you to know these accomplishments were obtained at the price of great personal sacrifies, financial and otherwise. I wish you to know also, that not only did the members of the Council not receive salaries, but most of them did not even receive a refund for the expenses incurred in the line of duty, such as traveling, office and secretarial expense, etc. Your President also was one of these. All this is said to assure you that all the money received by the College was devoted to the College alone.

Gentlemen, I feel that I am leaving to my successor, President Frederick Douglass of Toledo, a United States Chapter which is now established on a solid foundation. To be sure, much work remains to be done. In fact, the work has only just begun. I feel, however, and I sincerely hope the new President will experience much smoother sailing than it was my lot to experience.

Allow me to state that the two years which I have spent at the helm have been a great honor and privilege to me. I am thankful for having had this opportunity. I have learned much, and, although I am retiring now, I shall make it a duty to serve and help the United States Chapter to the best of my ability. To be sure, mistakes have been made, and I can but assure you that mistakes will still be made: we are only human beings. However, the mistakes made were of the head and not the heart.

Members and Fellows, please remain solidly aligned behind your new president. Let each one of you become an active proselyte for the College. If you do so, I can but see a great future for the College. Of course, the European situation being uncertain, the College may find itself retarded in its expansion in Europe, but not in the rest of the world. However, we must remember that man does not build for today alone, but builds also for the future; he does not build for himself alone, but builds also for the future of human welfare. In consequence, when the heavy sky of Nations will have cleared, the College will find the road open and unhampered, which will allow it to march proudly toward its great goal.

BANQUET ADDRESS

WILMER H. KRUSEN, M.D., F.A.C.S.

Formerly (twice) Director of Public Health, City of Philadelphia; President, Philadelphia College of Pharmacy and Science

PHILADELPHIA

Dr. Krusen spoke on some aspects of modern surgery. He mentioned the unusual number of medical biographies and autobiographies published during the past decade, as exemplified by Arthur Hertzler's recent publication. Pennsylvania, he stated, is proud of the contributions of Chevalier Jackson and Victor Heiser.

Notable progress has been made recently in the fields of carcinoma, tuberculosis, diphtheria, typhoid and venereal diseases. In such progress tribute is due Parran. Yet the status of surgical knowledge is changing daily. What will the future be? "Whither medicine?" Dr. Krusen felt that he does not know as much now as when he was an intern, and he is less inclined to be positive and dogmatic now than then.

He stressed the following basic points in surgical practice: The patient is the prime consideration. Mental receptivity should be the surgeon's constant attitude, for neophobia is a virulent disease. Likewise, education of the laity is imperative, for without this the application of surgical knowledge would be limited.

In regard to medical education, the present compares favorably with the past. The modern system at home and abroad is well known and is in contrast to the former inadequate preliminary education, the two year course, the absence of hospital experience, and the crowded clinic, where the student saw the backs of the surgeon and his assistants. Yet a different form of graduate work is necessary to maintain progress, and there is special need for graduate work for older physicians. Also, some provision should be made for the son of poor parents who is studious and brilliant yet cannot afford a medical education in these expensive days.

The surgeon has often been erroneously thought of as a rather sadistic and unsympathetic person, averse to giving information as to the whys and wherefores of ihs actions and not properly appreciative of the cooperation of the internist, the x-ray specialist, the hematologist and others in aiding him to make a diagnosis. There is, in fact, need for cooperation not only among these specialties, but among all groups having similar aspirations: physicians, pharmacists, dentists, nurses, veterinarians, chemists, biologists, physicists, lawyers, ministers, journalists and teachers.

VISIT THE EXHIBITS, ROOSEVELT HOTEL

Sorenson's Surgical Apparatus

There will be on display in Booth 23 for inspection by surgeons visiting the International Assembly exhibits several new models of Rotary-Type Compressors covering all ear, nose and throat treatment requirements, as well as Vapor-Proof Ether and Suction Apparatus for use in tonsillectomy and adenoidectomy, together with aspirating apparatus for major surgery. Visits to this exhibit of C. M. Sorenson Co., Inc., will be appreciated.

Baumanometer to Be Featured

At Booth 36 of the International Assembly exhibits the W. A. Baum Company will show the latest KOMPAK Model Lifetime Baumanometer, with many exclusive features, including the completely recessed cartridge tube. The ever-popular desk and wall models will also be prominently displayed. A new one-piece rubber bulb made of highest quality Latex, another important improvement to the Baumanometer, will be awaiting your critical examination.

Acousticon Invites Inspection

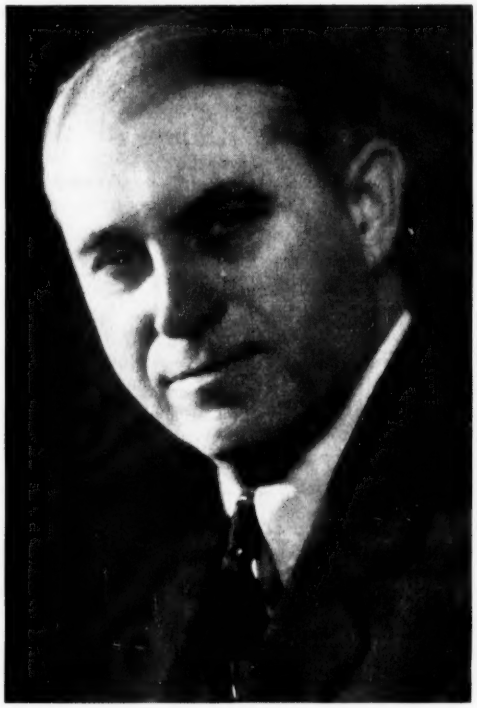
Acousticon extends a cordial invitation to all convention delegates to visit the exhibit at Booth 31. Here are demonstrated Acousticon's latest scientific achievements—the Coronation Acousticon and the recently introduced Crystalic Acousticon. The "Crystalic" is a wearable, portable vacuum tube hearing aid that brings patients all the volume and clarity required, without the slightest distortion. Acousticon will be glad to supply a colored chart of the ear to all interested doctors.

Electrical Hospital Equipment

An extensive line of hospital equipment will be displayed by the Prometheus Electric Corporation, of New York, in convention Booth 13. Many newly developed features and important improvements in design and construction of food conveyors, operating lights and sterilizing equipment will be shown. Visiting doctors interested in equipment for large and small hospitals should be sure to visit this interesting display.

CONVENTION OF INTERNATIONAL HOSPITAL ASSOCIATION AND AMERICAN HOSPITAL ASSOCIATION, TORONTO, CANADA

The sixth biennial congress of the *International Hospital Association,* Dr. Malcolm T. MacEachern, of Chicago, President, will be held in Toronto, Canada, September 19 to 23, at the



Malcolm T. MacEachern, M.D., C.M., D. Sc., F.A.C.P., President, International Hospital Association.

Royal York Hotel. A comprehensive program has been arranged, which includes papers by eminent internationally known hospital authorities, reports of study groups, discussions, visits to local hospitals and places of interest, receptions and dinners for delegates and guests. An outstanding feature will be the system of interpretation; five basic languages—English, German, French, Spanish and Italian—will be used, and it will be possible for everyone to follow the reading of the papers and take part in the discussions.

Immediately following this congress, the forty-first convention of the *American Hospital Association* and allied groups, including the *American College of Hospital Administrators,* the *National Association of Nurse Anesthetists,* the *Children's Hospital Association of America* and others, will take place at the same headquarters, from September 24 to 29. International delegates will be especially welcomed at the sessions. A large display of hospital equipment will be exhibited.

View of the Toronto General Hospital, showing the Medical Teaching Unit of the University of Toronto.

The Canadian Pacific Railway has arranged a number of tours following the Congress, covering such representative hospital and industrial centers as Niagara Falls, Buffalo, Cleveland, Detroit, Chicago, the Mayo Clinic, Washington and Boston; all will terminate in New York City, providing an opportunity to visit the World's Fair.

For reservations and further particulars address the Secretary, Local Arrangements Committee, International Hospital Association and American Hospital Association conventions, Wellesley Hospital, Toronto, Canada.

PHILADELPHIA GUILD CLINIC OF THE INTERNATIONAL COLLEGE OF SURGEONS

The program of the **Philadelphia Guild Clinic** for Saturday, April 15, under the chairmanship of Dr. Moses Behrend, will be as follows:

8:30 to 10 a. m. University Hospital. Dr. I. S. Ravdin and Staff.
10:15 to 11:30 a. m. Hahnemann Hospital. Dr. Earl B. Craig and Staff.
11:45 to 1:15 p. m. Temple University Hospital. Dr. W. Wayne Babcock and Staff.
1:30 p. m. Luncheon.
2:00 to 3:45 p. m. Jewish Hospital. Dr. Moses Behrend and Staff.
4:30 to 6:00 p. m. Jefferson Hospital. Dr. P. Brooke Bland and Staff.
7:00 p. m. Dinner, Union League.
Review of Clinics.

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The first congress of the **Societies of Endocrinology of the Little Entente** was held at Bucarest, Oct. 23 to 26, 1938. The following papers were read:

"The Corpus Luteum,"by Prof. Simonet, Paris.
"Virilism and Hirsutism in Women," by Prof. Charvat, Prague.
"Vitamin E and the Sexual Hormones," by Prof. Vacék, Prague.
"The Spleen as an Endocrine Gland," by Prof. Kostisch, Belgrade.
"The Thymus in Legal Medicine," by Prof. Minovici, Bucarest.
"The Mammary Gland," by Prof. Cristea Grigoriu, Cluj.
"The Suprarenal Glands," by Prof. Grădinesco, Cluj.
"The Epiphysis," by Prof. Parhon, Bucarest.

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The **Northern Medical Association** of **Philadelphia** held its regular meeting Monday evening, Oct. 17, 1938, at the Hotel Majestic. The program was as follows:

"Indications for Sub-Total Gastrectomy in the Radical Cure of Gastric and Duodenal Ulcer," by Dr. A. A. Berg, New York. Dr. Wayne W. Babcock, commentator.
"The Pneumonias," by Jesse G. M. Bullowa, New York. Dr. Samuel Loewenberg, commentator.
"The Therapeutic Value of Sulfanilamide and Its Derivatives," by Dr. D. Sergeant Pepper, Dean of University of Pennsylvania Medical School. Dr. Nathan Blumberg, commentator.

At the one hundred and seventy-third annual meeting of the **Medical Society of New Jersey,** in Atlantic City, the **Section on Gastro-Enterology,** convening at the Haddon Hall Hotel, Thursday morning, June 8, will present the following program:

9:30. "Experiences in Diagnosis With the Peritoneoscope: Indications for Its Use," by Dr. C. Abbott Beling, of the Hospital of St. Barnabas and for Women and Children, Newark.
9:50. "The Treatment of Intestinal Obstruction With the Double-Barreled Intestinal Tube," by Dr. W. Osler Abbott, of the University of Pennsylvania.
10:30. "Diseases of the Blood Vessels as They Affect the Digestive Tract," by Dr. Stuart Z. Hawkes, of the Presbyterian Hospital, Newark.
11:00. "Functional Disorders of the Colon," by Dr. Sigurd Johnsen, of the Passaic General Hospital.
11:30. "The Constitutionally Inadequate Patient," by Dr. Walter Alvarez, of the Mayo Clinic.

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The first annual meeting of the **Association for Traumatic Surgery** will be held at Hot Springs, Va., May 8 and 9. The president is Dr. Kellogg Speed, Chicago; the secretary Dr. Ralph Carothers, Cincinnati.

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The **American Urological Association** will convene at White Sulphur Springs, W. Va., May 29 to June 1. The president is Dr. Edgar G. Ballenger, Atlanta, Ga., the secretary Dr. Clyde L. Deming, New Haven, Conn.

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The **Milwaukee Society of Clinical Surgery** met January 24, the following program being presented: "The Science of Surgery," by Dr. William J. Carson, retiring president; "Nupercaine Spinal Anesthesia in General Surgery," by Dr. Karl Schlaepfer, president elect (discussion by Dr. Millard Tufts); "Gastrectomy—Results in Ten Consecutive Cases Ten Years After Operation," by Dr. L. W. Hipke.

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Dr. Anthony Bassler addressed the **New York Physicians—Yorkville Medical Society** on Wednesday, Nov. 23, 1938, his subject being "Man—the Known." At the same meeting Dr. William Seaman spoke on "Tumor Formations in the Mineral, Vegetable and Animal Kingdoms."

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SURGEONS ARE INVITED TO ATTEND THE ASSEMBLY OF THE INTERNATIONAL COLLEGE OF SURGEONS, NEW YORK CITY, MAY 21 TO 25, ROOSEVELT HOTEL

Book Reviews

Die angeborenen Fehlbildungen der menschlichen Hand: Erb- und Konstitutionsbiologie der Hand. By Prof. Walther Müller. Price, 14 marks; bound, 15.50 marks. Pp. 170, with 116 illustrations. Leipzig: George Thieme, 1937.

THIS work is exhaustive in its completeness, and as one reads and enjoys the multiplicity of variations, one is continually impressed by the changes possible in extremity development.

These changes are discussed and excellently illustrated, incorrect growth in the terminal phalanges of the fingers being considered first and then those variations in the bones proximal to and including the ulna and the radius, chest wall defects and the changes in the distal extremities. The changes in the phalanges of the toes and those in the lower extremities themselves are also detailed with great exactness.

Congenital malformations are carefully and systematically described along with the line of heredity, so that prognostications of the changes possible in the progeny of these deformed individuals can be accurately made. The illustrations are profuse and excellent, and the references are extensive so far as the German workers are concerned, but few references to English, French and American contributors are made. On the whole, this is a valuable work, but it would have a greater value if the Latin terminology were used more freely.

WILLIAM R. CUBBINS.

Diseases of the Ear, Nose and Throat. By Francis L. Lederer, B.Sc., M.D., F. A. C. S. Price, $10. Pp. 835, with nearly 500 illustrations and 16 color plates. Philadelphia: F. H. Davis Company, 1938.

THIS book is one of the most complete reference works that has been published. Owing to the form in which it is presented, it also will serve very well as a textbook. The volume is printed with double columns on each page, which adds considerably to reading comfort. Printed in small type is a great deal of material which is of interest to the practitioner but which may be omitted by the medical student.

The book is divided into five sections, the first four of which are prefaced by an anatomic description, with stress on the practical importance of the anatomy, rather than the didactic point of view. Each section is followed by a review of the physiologic features of the part considered, a subject usually slighted in otorhinolaryngology.

In the section on the ear, there is an excellent discussion of the complications of suppurative ear disease, including separate chapters on meningitis, labyrinthitis, brain abscess, the much-discussed petrositis, lateral sinus phlebitis, and facial paralysis. The second section treats of the diseases of the nose and nasal accessory sinuses. A section of discussion of sinus disease in general is followed by separate chapters on each of the sinuses. Cavernous sinus thrombosis, ostemyelitis of the skull, fracture of the sinuses, and the relationship of sinus disease to the eye are discussed in detail. In the section on diseases of the pharynx, there are chapters on diseases of the oral cavity, the tongue, the salivary apparatus and the palate. There is a chapter on the blood disturbances, including leukemia, granucytopenia, infectious mononeucleosis, pernicious anemia, polycythemia, and purpura; their manifestations in the oral cavity and pharynx are discussed. The fourth section considers the diseases of the larynx, trachea, bronchi and esophagus. The laryngeal section is most complete, with an entire chapter describing the surgery of that organ. The technic of endoscopy is given, as well as a discussion of the chest diseases that are important from a bronchoscopic standpoint.

The fifth section is a correlation of the subject of ear, nose and throat diseases with general medicine. Diet, vitamin deficiency, protein shock and endocrine disorders are discussed. Swellings of the neck, facial neuralgias, disorders of speech and psychiatric aspects are described.

There are almost 500 illustrations in this volume, including 16 color plates. Description of technics of ear, nose and throat operations, which are accurate and easy to follow, are included in the text. This book has a definite value, both as a general textbook and as a complete reference work for the general practitioner and the specialist.

FREDERIC J. POLLOCK.

Die Röntgentiefentherapie. By Hans Holfelder and others. Price, bound, $11.60. Pp. 341, with 265 illustrations. Leipzig, Georg Thieme, 1938.

THE principal objects of radiation therapy in cancer are discussed by Holfelder. Killing the cancer cells without concomitant irreparable injuring of the normal cells within the radiation beam is the important requirement in radiation treatment for malignant tumors. This is attained by limitation of the mass of the irradiated tissues, by the use of tube compression to bring the radiation beam as close as possible to the tumor cell; by the number and size of fields; by an accurate centering of the beam onto the tumor; by the determination of the doses effective in the tumor; by the selection of the size of the fraction doses; by the time duration and spacing of the single spaced dose; by the intensity of the outflow in r minutes, whether protracted, normal or concentrated; by the determination of the voltage, the filter and the half value layer, and by the medical care before, during and after radiation treatment.

Bentin discusses the physical foundations of measuring roentgen rays by the use of the r dose meters. He discusses the definition of the international r unit, the methods of measuring, and the standardization of the instrument.

The microscopic changes in the tumor cells and the normal tissues are presented by Englman. The microscopic studies of the cell changes evince a multiplicity of reactions. Consecutive biopsies of cauliflower cancers of the uterine cervix permit the best study of the cell changes. He describes the variation in reactions caused (1) by lethal and sublethal doses applied in one sitting, and (2) by the method of application, namely, the single massive dose, the fractionated spaced dose given with either a slow, an average or a concentrated outflow. It would lead too far to give a detailed finding in a book review.

Reisner discusses the skin erythema as the standard for the determination of the tolerance dose applied in a single sitting and the influence of fractionation and the rate of recovery of the normal tissues, assuming that the action is cumulative in the biologically inferior cancer cell. The influence of the field size, of the radiation quality, and of time duration of application of the fraction dose is demonstrated. Finally the skin erythema dose produced by the Frankfurt technic of irradiation is given. The rate of recovery is the basis for the determination of the total dose, and the length of intervals between fractions.

Holfelder gives in the next chapter the spaced doses and technics of his method for each region and organ of the body in fourteen tables, illustrating the application of the radiation beams for each table.

The medical treatment of the patient during and after irradiation is described by Weisswange, the care of the irradiated skin and mucous membranes by Reisner, and the legal interpretation and treatment of radiation injuries by Holfelder.

Teschendorf presents the chapter on the influence of roentgen treatment on the offspring. The principles of genetics are discussed, and on these are based the conclusions prevailing in central Europe today in relation to diagnostic and therapeutic applications. The germ plasma must be kept absolutely pure and undamaged, as it is the most highly prized possession of a nation or a race. Hence ovarian irradiations should always cause permanent cessation of ovulation to avoid insemination of an ovum having damaged genes. All unnecessary diagnostic or therapeutic applications to the germ cells should be prevented.

The second part offers a detailed discussion of the clinic and treatment of tumors of the skin, the tongue, the brain, the breast, the bronchi, the esophagus, the stomach, the pelvic organs, the bones, the thyroid and the lungs. The significance and treatment of radiation indurations of the lungs are discussed by Teschendorf, and the roentgen treatment of bronchial asthma is given by Bauer.

The review has been a treat. A perusal of the monograph will be profitable to the physicist, the radiation therapist, the oncologist and the surgeon. The thoroughness and exactness of the presentation make it a valuable contribution to the radiologic, surgical and pathologic literature. The illustrations are clear and enhance the text.

HENRY SCHMITZ.

Clinique chirurgicale des pays chauds. By Botreau-Roussel, M.D., director of the school of application of the health service of the colonial troops, Pharo. With the collaboration of Profs. Assali, Dejou, Huard, Montagné, Palès and Roques. Price, 80 francs. Pp. 336, with illustrations. Paris: Masson & Cie, 1938.

In this volume one finds a practical and scientific discussion—one could truthfully say, a superexcellent analysis—of the etiology, pathology, symptomatology and also the medical and surgical treatment of the diseases that prevail in tropical and semitropical regions. The chapters on choice and evaluation of treatment are exceptionally valuable. In them are clearly stated what procedure is best for the patient. In this volume are found the study of such clinical entities as the various surgical conditions that complicate malarial infection and the treatment indicated for each manifestation. Amebiasis,

tropical dysentery and colitis and their surgical complications, liver abscess, perforative and nonperforative peritonitis are adequately presented. The authors call attention to the distal metastatic localization of the amoeba which result in bronchopulmonary, pleuritic, cholecystic, encephalic, splenic, perinephritic or osteoarticular amebiasis. The chapter on liver abscess and the treatment thereof is a classic. Thirty pages are devoted to the description, evolution, pathologic anatomy and treatment of elephantiasis arabum. This chapter is profusely illustrated, and one cannot fail to have a clear conception of this disease, its ravages and its surgical treatment after having attentively looked at and studied the graphs, charts, diagrams and photographs that accompany it. The evolution of surgical tuberculosis in the Negro is presented in a masterly fashion, and with its numerous illustrations this section constitutes one of the most interesting of the book. Bilharziasis, yaws, phlebitic funiculitis, filariasis, brucellosis, each and all are excellently presented.

The style is clear, concise and authoritative. The illustrations are well selected. Having this book at hand will enable the medical practitioner to handle confidently and expeditiously many of the complaints that occur in tropical and semitropical countries. This book will be appreciated for the valuable information it contains.

AIMÉ PAUL HEINECK.

Surgery of the Esophagus. By Prof. Dr. Raymond Grégoire. Price, 35 francs. Pp. 180, with illustrations. Paris: Masson & Cie, 1935.

THIS volume is an exposition of the present-day aspects of esophageal surgery.

In recent years there has been much progress in the recognition and treatment of diseases of the esophagus; radiology and endoscopy have thrown much light on the subject. These means of exploration have made it possible to observe many conditions previously only imperfectly known, and in the course of the last thirty years many new surgical operative methods have been devised.

Grégoire treats the subject thoroughly; his book includes chapters on gastric-esophageal ulcer, on diverticula of the esophagus, on megaesophagus, on esophageal foreign bodies, on the surgery of esophageal cancer and on the newer methods of approach to the region.

THOREK.

Die Verletzte Hand: Behandlung und Behandlungsergebnisse der Finger-und Handverletzungen und Infektionen. By Dr. Karl Kromer, Assistant, Unfallkrankenhaus, Vienna. With a foreword by Prof. L. Böhler. Price, 36 marks Pp. 288, with 530 illustrations and 82 tables. Vienna: Wilhelm Maudrich, 1938.

WITH evident study and care, from a source of traumatic surgery which has become world-renowned, the author has divided the treatment of injuries and infections of the hand into three major groups, namely, the treatment of fresh open finger and hand infections, the treatment of acute inflammatory processes and the treatment of fresh closed finger and hand injuries. The indications and methods of nonoperative and operative treatment, and the management of foreign bodies, crushing injuries and burns are logically described. In the chapter on fractures of the phalanges, metacarpals and carpals, the finer points as well as the general management are discussed. The importance of active movement of the noninjured parts is stressed. The systematic conservative and radical treatment of the chronic edematous fibrosed hand is described. The second part of the book deals with end-results of the various types of finger and hand injuries and infections.

The book is systematically arranged and well illustrated with photographs, roentgenograms, sketches and charts, and the bibliography covers the subject matter comprehensively.

DANIEL H. LEVINTHAL.

Modern Surgical Technique. By Max Thorek, M.D., Prof. Clinical Surgery, Cook County Graduate School of Medicine; Attending Surgeon, Cook County Hospital; Surgeon-in-Chief, the American Hospital; Consulting Surgeon, Municipal Tuberculosis Sanitarium. Price $33. Pp. 2,045, with 2,174 illustrations. Philadelphia: J. B. Lippincott Company, 1938.

THE author of this work needs no introduction to the surgical world. Besides being a master of surgical technic, his long and fruitful clinical experience and numerous contributions to surgical literature entitle him to speak with authority on surgical problems, and one feels that he is exceptionally qualified to present a treatise on modern surgical technic.

These three volumes fill a long felt need. They will appeal to the well trained surgeon, who not infrequently feels the need of a rapid and authoritative survey of specific points of technic, as well as to the less experienced surgeon, who

needs constant guidance and elucidation of the various steps of operative procedures. To these the three volumes will be invaluable.

The first volume begins with a brief, up-to-date exposé of the fundamentals in operating room technic and of the various forms of anesthesia, regional and local. In the discussion of intratracheal insufflation one misses mention of the Magill catheter, which can be introduced through the nose as well as through the mouth, and constitutes an easy method of laryngeal intubation. The rest of the first volume is dedicated to surgery of the head and neck, and to plastic surgery. Brain surgery, as well as ophthalmologic surgery, is also included. In dealing with thyroid surgery the author mentions "boiling water injections." This reviewer is of the opinion that injections of boiling water or of any other destructive or sclerosing agent are to be avoided.

The second volume is devoted to surgery of the nerves, blood vessels, bones, breast and chest. In the description of the technic of cervical sympathectomy, and especially of ganglionectomy, the author has been, perhaps, a little brief. The removal of the superior cervical sympathetic ganglion, when performed with or without the removal of the cervical sympathetic chain, requires accurate anatomic knowledge and a systematized surgical procedure, if one wishes to avoid misfortune. The same holds true for stellectomy.

The third volume is devoted to abdominal, genito-urinary and gynecologic surgery. The thorough handling of the subject is outstanding. Thorek discusses the problems with authority, since these particularly constitute his life-long interest. His conception of the surgical treatment of the gallbladder by electrocoagulation is a highly valuable contribution, as it has reduced the mortality to an extremely low level.

The general impression which one gains in perusing Thorek's three volumes on surgical technic is that he has endeavored to present the steps of various operations in a clear, short and readable manner. In this task he has well succeeded. The illustrations are in most instances excellent. One is impressed by the obvious effort made by the writer to give credit to whom it is due, a point which is too easily overlooked by some writers. The work is a timely contribution of very high value and should be on the book shelves of every one doing surgery.

ANDRÉ CROTTI.

Lezioni di clinico medico. By Cesare Frugoni. Price, 60 lire. Pp. 606, with 46 illustrations. Rome: Luigi Pozzi, 1934.

ALTHOUGH published a few years ago, this book has lost none of its value.

Professor Frugoni cites recent advances in clinical medicine, and then, in each of twenty-seven chapters, discusses a particular recognized clinical syndrome. In each condition all the aids of modern science are brought to bear to arrive at the diagnosis. A case is postulated, and the patient's history, symptoms and signs, the results of physical examination, the laboratory findings, and the knowledge furnished by special procedures, such as x-ray examination, are detailed. After full consideration of the case, the means of arriving at a diagnosis is explained. Thus each case is a problem to be solved by application of the various adjuncts of modern medicine. This method of arriving at a diagnosis—proceeding from à priori facts to a conclusion—distinguishes the scientific method, and is in contrast to observations less exactly made and less scrupulously analyzed.

Thus the book serves not only as an exposition of clinical syndromes but as a guide in application of all utilizable methods to the understanding of any syndrome. It pleases by the directness and clarity of its style and the orderliness of its approach no less than by the value of the collected and synthesized data.

THOREK.

Operative Behandlung der Schenkelhalsbrüche und Schenkelhalspseudarthrosen und ihre Ergebnisse. By Dr. Lorenz Böhler, Director, Unfallkrankenhaus, Vienna, A.O. Professor of Surgery, University of Vienna, and Dr. Wilhelm Jeschke. Price, 32 marks. Pp. 201, with 533 illustrations. Vienna: Wilhelm Maudrich, 1938.

DURING this era of metallic fixation of fractures of the neck of the femur with open and blind nailing, pins, screws, three flanged nails, two flanged nails, with and without guide wires, bone pegs, etc., it is timely to read the technic of treatment by this well known author and the presentation of end-results by his associate. Their book describes in great detail the use of a modified Sven Johansson nail inserted blindly across the neck of the femur in the treatment of fresh fractures, delayed union or nonunion. The presentation is based on a series of seventy-eight patients treated between March

1933 and June 1937. Among these were fifty with fresh fractures, in all of whom bony union was obtained. The remaining twenty-eight cases were those of delayed union and pseudarthrosis; in this group, 90 per cent of the patients secured bony union. The authors believe, and their results seem to prove, that this method of treatment will always result in bony union with good function provided the cases are properly selected and the technic meticulously followed.

The authors differ in opinion from many contemporary authors regarding the value of securing a reduction with the femoral neck in the valgus position. Böhler and Jeschke believe that this must be avoided, since it will result in necrosis of the femural head and subsequent arthritis.

The subject is presented in a clear and systematic fashion; the illustrations and the reproductions of the roentgenograms are clear. This book will prove of great value to all those who treat fractures. It might be suggested that for the sake of completeness in future editions a final chapter be added, dealing with reconstructive operations for the types of cases in which the nailing operation is contraindicated.

DANIEL H. LEVINTHAL.

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S. (Eng.). Sixth edition. Price, $6.50. Pp. 284, with 358 illustrations. Baltimore: William Wood & Company, 1937.

THIS book was originally written as an antidote to the growing tendency in modern medical and surgical practice to rely upon laboratory investigations and other auxiliary reports for a diagnosis. The author is of the opinion that the patient's history and physical methods of examination must always remain the main channels by which a diagnosis must be arrived at, an opinion with which the reviewer is in complete agreement.

In the twenty-five concise chapters which make up this handy volume the author considers the main regions of the body and the contained important organs and discusses the principal physical signs which point to pathologic conditions, especially those which call for surgical therapy.

That practitioners have found the work of clinical value is proved by the fact that it has now reached a sixth edition. The text has been thoroughly revised. While all chapters will be found of great practical importance, the reviewer is particularly struck with those dealing with the elicitation of signs in the thorax, abdomen and the genito-urinary organs. This manual can be heartily recommended to young practitioners on account of the simplicity of expression, the plentitude of excellent illustrations and the fact that it gives ample evidence of practical everyday diagnostic experience of a surgeon with wide opportunities of judging what should be looked for in the examination of a patient.

THOREK.

Fractures and Dislocations for Practitioners. By Edwin O. Geckeler, M.D. Price, $4. Pp. 252, with 213 illustrations. Baltimore: William Wood & Company, 1937.

THE author desired to make this book "a complete, yet simplified, guide to the management of bone and joint injuries," by condensing "the subject of fractures and dislocations without the omission of important details." He realizes that "elaborate equipment and complicated technic do not of themselves produce success" but that "the intelligent use of general principles" brings about, for the most part, satisfactory results. The increasing frequency and severity of highway accidents call for detailed information and exceptional skill on the part of physicians. Hence the author selects only the one most practicable method for a given emergency condition confronting the doctor, who is thus saved time and hesitation; operative technic has been limited to description of skeletal traction and subcutaneous leverage; the importance of follow-up treatment, however, has not been sacrificed to high-pressure conditions.

In the table of contents one notes the strength of chapter titles evidenced merely by omitting such specifying articles as "a," "an" or "the," thus, "Bones of Skull and Face," "Hand," "Foot," "Vertebrae," and so on. An individual *Clavicle* or *Shoulder Joint* might be safer in the care of one who knows them stark and singly for the population at large. There are 32 such chapters, apportioned between "Part One: Fractures" and "Part Two: Dislocations."

The illustrations are almost as numerous as the pages; they have been reproduced from radiographs, photographs, diagrams, hand-done sketches. The style is direct, clear and authoritative. With the substantial binding with double-stitched paging—so it obeys the will of the user—the heavily glazed paper, necessary for the generosity of illustration, this book might go intact through a war.

KEROHT.

Cranio-Cerebral Injuries. By Donald Munro, M.D. Price, $4. Pp. 393, with 62 illustrations. New York: Oxford University Press, 1938.

THIS book crystallizes present-day treatment of craniocerebral injuries. There are many excellent chapters. To understand completely what may occur, "fundamental cerebral physio-pathology" is discussed. It is only by understanding these processes that one can adequately treat brain injury.

Perhaps one of the best chapters is that on general principles of treatment. Here the author strives to present, successfully, a picture of therapy on a physiopathologic basis. He pleads for the physician to think not in terms of "concussion" or "fracture of the skull" but on the basis of an upset in the normal function and of the pathologic changes resulting from the injuries sustained. Thus the physician will be sufficiently equipped, mentally, to carry out satisfactory treatment.

The author later discusses a schedule for those convalescing from craniocerebral injuries. Other subjects considered are roentgenography (indications and contraindications), nonoperative and operative methods of treatment, complications due to necessary treatment and differential diagnosis. Not of least value is the section on first aid.

One can find fault with the chapter on craniocerebral injuries of the new-born. This is the only section that is inadequate.

On the whole, the book is well worth while, and all physicians can read it with profit.

XAM.

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VISIT THE EXHIBITS, ROOSEVELT HOTEL

Lea & Febiger Publications

Among the new books which Lea & Febiger will exhibit at convention Booth 32 are Stimson's "Fractures and Dislocations," Miller's "Applied Anatomy," Cowan's "Refraction of the Eye," Schlanser's "Practical Otology, Rhinology and Laryngology," Brenner's "Pediatric Surgery" and Thorndike's "Athletic Injuries." New editions of several outstanding recent medical books will also be shown.

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Lippincott Medical Books

The Lippincott display of new and important medical books in Booth 3 of the International Assembly exhibits will include the second printing of Thorek's "Modern Surgical Technique." This superb work was reprinted within five months of its publication. *The Journal of the Amedican Medical Association* states: "If it is possible to write a 'stream-lined' modern version of surgical procedure and art, this three volume edition comes close to the mark."

From Saunders Company

Of particular interest in the exhibit of the W. B. Saunders Company at convention Booth 19 are the following new books and new editions: Callander's "Surgical Anatomy," Scudder's "Fractures," Cutler's "Cancer," Morrison on "Nose, Throat and Ear," Beck's "Hematologic Technic," Norris and Landis' "Chest Diagnosis," Body's "Surgical Pathology," Reimann's "The Pneumonias," Barsky's "Plastic Surgery," De Lee's "Obstetrics," the "American Illustrated Medical Dictionary," the "Mayo Clinic Volume," Murphy's "Anemias in Practice," Wolf's "Endocrinology," Cantarow and Trumper's "Clinical Biochemistry," Fluhmann's "Menstrual Disorders," Pelouze on "Gonorrhea," Mallory's "Pathological Technique," Crile's "Surgical Treatment of Hypertension," Andrews' "Dermatology," Beckman's "Treatment," Curtis' "Gynecology."